Life After *Dowell:*
The Impact of Unitary Status and the End of Court-Ordered Desegregation, 1993-2013

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ABSTRACT

In 1991, the United States Supreme Court's ruling in *Board of Education of Oklahoma City v. Dowell* established guidelines that expedited the lower courts' ability to terminate court-ordered desegregation cases, even in cases where racial imbalance was likely to persist. The courts refer to districts that have had court cases terminated as operating under "unitary status." Over the next 25 years, the lower courts terminated hundreds of desegregation orders. This dissertation examines patterns of racial composition, school finance, and educational attainment in 480 school districts operating under unitary status, and compares these patterns to those in districts that remained under court oversight as well as those districts with no court-mandated desegregation plan in place. These analyses include data from 1993 through 2013 and provide significant evidence that unitary districts followed a different trajectory than either districts not impacted by the *Dowell* ruling or districts that remained under court order through 2010.

In addition to finding both overall changes in racial composition and differing patterns of segregation across the subsets of districts analyzed, findings indicate a relationship between unitary status and increasing segregation levels over time. Additionally, districts not under court order were consistently able to spend more per pupil than districts with active court orders and those operating under unitary status. The finance analysis also found that while unitary districts were able to spend more on students for some time after court orders terminated, these efforts could not be sustained long-term. Finally, an examination of educational attainment showed that court-monitored and unitary districts had much lower rates of educational attainment in 1993,

and high schools with very low levels of education attainment were overrepresented in the subsets of districts impacted by the *Dowell* decision.

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CHAPTER 1

INTRODUCTION

This dissertation examines the impact of the Supreme Court's 1991 *Oklahoma City v. Dowell* decision that permitted terminating court-ordered desegregation plans. Using a multi-modal analytical analysis, the consequences of the *Dowell* decision are examined to gauge the impact of the ruling on racial composition, school finance, and education attainment patterns in districts impacted by the *Dowell* decision, and contrast these patterns with school districts not under court order at the time of the *Dowell* ruling.

In 1991, the Supreme Court issued a decision in the *Oklahoma City v. Dowell* case that significantly shifted the legal and policy landscape for many school districts grappling with a history of *de jure* segregation. In this case, the justices ruled 5 to 3 that the lower courts could end desegregation cases even when the absence of a court-ordered desegregation plan would ensure a return to segregated schools. The *Dowell* decision gave guidance to lower courts on granting what the judiciary refers to as "unitary status."

Unitary status was the court's terminology for a district that had, in the words of the *Dowell* ruling, "complied in good faith with the desegregation decree since it was entered" and "the vestiges of past discrimination had been eliminated to the extent practicable" (*Dowell,* cited in Moore, 2002). This declaration of unitary status allowed school districts to terminate magnet programs, attendance boundaries, and other programs and policies designed to eliminate the impact of de jure segregation and mitigate the effects of de facto segregation. Since 1991, the courts have terminated court-ordered desegregation plans in over 200 districts that serve over four million students.

The Supreme Court was sharply divided on the issues raised by the *Dowell* case, and the dissension hinged on a central idea. The five-justice majority, represented by Chief Justice Rheinquist's opinion in the case, emphasized that the *Brown* decision considered federal intervention in local education policy temporary. Their ruling insisted that full local control be restored through unitary status as soon as the "Board had complied in good faith with the desegregation decree since it was entered" and "the vestiges of past discrimination had been eliminated to the extent practicable" (*Dowell,* cited in Moore, 2002). This opinion was one of a trio of cases, along with *Freeman v. Pitts* (1992) and *Missouri v. Jenkins* (1995) that permitted and even encouraged the termination of court-ordered desegregation plans.

Justice Thurgood Marshall, writing for the dissenting justices, raised serious concerns about this emphasis on the transitory nature of desegregation orders. Marshall notes that the majority decision "fails to recognize explicitly the threatened reemergence of one-race schools as a relevant "vestige of de jure segregation." While the majority opinion considered desegregation orders fulfilled once the mechanisms of state-sponsored segregation were removed, the dissenting opinion holds that "our school desegregation jurisprudence establishes that the effects of past discrimination remain chargeable to the school district regardless of its lack of continued enforcement of segregation, and the remedial decree is required until those effects have been finally eliminated" (*Board of Education v. Dowell,* 1991, p. 498).

The purpose of this study is to apply an analytical framework to test the hypothesis put forth by Justice Marshall and his colleagues in the dissenting opinion to *Dowell*. Twenty-one years of data allow for a comparison of hundreds of unitary districts against districts that remain under court supervision as well as districts that were not under desegregation orders in

the time of the *Dowell* ruling. By engaging in a statistical analysis of the racial composition of these districts, this dissertation can examine changes in racial composition that occurred since the *Dowell* ruling and determine if patterns of any shifts in racial makeup were unique to unitary districts. By examining a comprehensive set of unitary districts and contrasting trends in these districts with those districts that remain under court order, this dissertation seeks to provide additional evidence about shifts in racial composition of school districts once the courts terminate mandatory desegregation plans.

For many years after the *Dowell* ruling, there was significant worry that the end of court-ordered desegregation plans could undo the progress that school districts had made towards racial desegregation throughout the 1970s and 1980s. While there was significant worry and debate about the possibility of this "resegregation," researchers had conducted only limited empirical research on resegregation. More recently, Clotfelter, Vigdor, and Ladd (2006), Lutz (2006), and Reardon, Grewal, Kalogrides, and Greenberg (2011) all conducted research on increasingly comprehensive samples of districts with desegregation orders. This analysis will add to this body of research by using a comprehensive dataset over a longer period, employing a data panel that includes 21 years of key information on 480 school districts that were following court-ordered desegregation plans in 1991 at the time of the *Dowell* ruling. This panel data allows for a longitudinal examination of racial composition of school districts over time and permits examination of gradual shifts in racial composition for many years after the courts granted unitary status to a school district.

In addition to examining racial composition, this dissertation also examines finance and educational attainment patterns in unitary districts. This examination continues to explore the concerns that the dissenting justices in the *Dowell* decision voice about the critical

educational and policy decisions that may be "shaped by and perpetuate the state-created message of racial inferiority associated with the school district's historical involvement in segregation" (*Board of Education v. Dowell,* 1991, p. 498). This examination of fiscal policy and education attainment also fills a gap in the current research about unitary districts. While numerous researchers have examined unitary districts for evidence of resegregation, little has been analyzed or written concerning the education policy and outcomes in these districts. Research on districts operating under unitary status is often limited to case studies of a single district. Given that districts often argued for the termination of court-ordered desegregation plans because they constrained their ability to make autonomous policy decisions, further research about post-unitary district policy will help inform consideration of this argument and provide valuable information for legal scholars, education researchers, and policy makers.

Research Questions

In order to explore the relationship between a district's desegregation status and other key policy outcomes, this study seeks to answer three sets of research questions associated with each of the major outcome areas examined.

Racial Composition

1. How has racial composition of post-unitary districts shifted since the *Dowell* ruling in 1991?
2. How do these changes compare to changes among all public schools as well as districts that remain under court order?
3. Are any changes in racial composition related to the termination of court orders, and if so, how long does it take these changes to emerge?

School Finance

1. Does school finance data for post-unitary districts indicate any change in revenue or spending patterns during the post-*Dowell* era?
2. Do any changes in spending patterns among post-unitary districts indicate an increase or decrease of fiscal support for schools during this period?
3. Did fiscal patterns change once courts granted districts unitary status?

Education Attainment

1. How did educational attainment vary between schools not under court order, schools that were under court order, and schools that courts declared unitary between 1993 and 2013?
2. Did patterns in education attainment change after courts declared districts unitary?

Overview of the Study

This descriptive study provides an overview of both legal framework for desegregation and unitary declarations, as well as the social science research documenting the harms of segregation and the benefits of desegregation. Chapter 2 provides the overview of the relevant research and literature about the legal framework and an overview of the social science research regarding desegregation as well as some additional context for the analytical framework employed throughout.

Chapters 3 through 5 each focus on a separate set of research questions posed by this study. Chapter 3 focuses on research questions related to racial composition, Chapter 4 analyzes the research questions related to school finance, and Chapter 5 examines the questions related to educational attainment. While each of these chapters has common ground in terms of some of the data points and research method employed for all of the research

questions, each chapter has some distinctly different aspects to the methodology used to answer specific sets of research questions. Given this structure, this introductory chapter includes a "Data Sources" section, and each chapter includes a methodology discussion that explains in detail additional data that is unique to that set of research questions as well as the research methodology utilized for a specific analysis.

Chapter 6 examines the conclusions drawn from the findings for each of the research questions. This analysis of findings includes recommendations for policymakers and considers the results within the context of the *Dowell* decision. Finally, Chapter 6 discusses limitations of this study and makes recommendations for researchers and policymakers about topics for further examination.

Data Sources

This study uses a 21-year panel of district level data from 1993 through school year 2013, including data on 480 school districts where court-ordered desegregation rulings were in effect at the time of the Supreme Court's *Dowell* decision.

Several sources, including Lexis-Nexis, the Department of Justice, resources made available by the Lewis Mumford Center for Comparative Urban and Regional Research, and research by Reardon et al. (2011) were used to compile the list of court cases dismissed after 1991. Although this list of districts may not be exhaustive, it appears to be one of the most comprehensive sets of data on districts under court order at the time of the *Dowell* ruling. Initially, this list of desegregation cases included 656 school districts. From this broader list of 657 districts that had been under court order in 1991, districts with fewer than 2,000 students (in 1993) were culled from the list, resulting in a final number of 480 districts that were under court order at the time of the *Dowell* ruling.

In order to compare racial composition, finance patterns, and education attainment trends from these 480 districts to patterns in districts not affected by court-ordered desegregation cases, a dataset was built which included both the 480 desegregation districts and all other public school districts with at least 2,000 students from the same states as the desegregation districts. Altogether, the entire dataset included 6,567 districts—6,087 of these districts were not under court order in 1991 (referred to as "Not under Court Order" in tables and figures in this dissertation), 265 of these districts were under court order in 1991 and remained under court order through at least 2010 (referred to as "Never Released" in tables and figures in this dissertation), and 215 of these school districts were under court order in 1991 but ruled "unitary" by the courts sometime before 2010 (referred to as "Unitary" in tables and figures in this dissertation). Each of these subsets of districts is treated as a distinct category in the analyses in this dissertation. The dataset includes data from these districts from the 1992-1993 school year (referred to as 1993 for the remainder of the paper) through the 2012-2013 school year (hereafter referred to as 2013).

Overview of the Dataset

Table 1.1 provides a breakdown of these districts across the three subsets in 1993 and 2013 by both the number of districts as well as the percentage of the student population enrolled in each subset.

Table 1.1

Breakdown of Dataset by Desegregation Status, 1993 and 2013

	1993 (n=6,567)	Percentage of school districts	Percentage of students enrolled	2013 (n=7,090)	Percentage of school districts	Percentage of students enrolled
Not Under Court Order	6087	93%	76%	6,612	93%	79%
Remained Under Court Order	265	4%	13%	263	4%	11%
Unitary	215	3%	11%	214	3%	10%

Only 7% of school districts were under court-ordered desegregation plans at the time of the *Dowell* ruling; they served 24% of the student population in this sample. While the proportion of school districts in each subset remains essentially stable across the 20-year panel, the share of the student population attending a district that was under court order shrank from 24% to 21%.

Region

Because various regions of the country have differing histories regarding school segregation—most notably the Southern states that seceded from the Union during the Civil War—this paper analyzes various aspects of the research questions from a regional perspective. The paper defines the geographic regions using the regions established by Orfield, Frankenberg, Ee, and Kuscera (2014):

- South: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia;
- Border: Delaware, Kentucky, Maryland, Missouri, Oklahoma, and West Virginia;

- Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont;
- Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin;
- West: Arizona, California, Colorado, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Given that Hawaii and Alaska have distinctive populations and are largely absent in the legal history of segregation in this country, they are not included in this dataset. This analysis treats the District of Columbia as a city rather than a state.

Not surprisingly, the two subsets of school districts impacted by desegregation litigation are disproportionately comprised of Southern districts. Table 1.2 show the breakdown of districts across regions in 1993.

Table 1.2

Regional Distribution of Desegregation Cases

Region	Total School Districts (n=6567)	No Court Order (n=6,087)	Never Released (n=265)	Unitary (n=215)
South	24%	19%	86%	73%
Border	8%	6%	4%	7%
Northeast	22%	26%	4%	2%
Midwest	28%	36%	3%	15%
West	6%	13%	3%	6%

When the subsets are disaggregated by region and weighted by student enrollment, both the subsets of districts that remain under court order and unitary districts are skewed

towards students attending southern districts. Table 1.3 shows the regional disaggregation weighted by student enrollment.

Table 1.3

Regional Distribution of Desegregation Cases weighted by Student Enrollment

Region	Total School Districts (n=38,323,236)	No Court Order (n=29,190,570)	Never Released (n=4,946,709)	Unitary (n=4,185,957)
South	33%	26%	42%	70%
Border	7%	8%	2%	10%
Northeast	17%	18%	27%	2%
Midwest	22%	25%	12%	11%
West	21%	24%	16%	7%

One final way to consider the regional impact of court-ordered desegregation and its termination is to consider the number of students in the region who are served by districts under court order at the time of the *Dowell* ruling, shown in Table 1.4. This disaggregation shows that 40% of students in the South, approximately 20 percent of students in the Border and Northeast regions, and 15 percent of students in the Midwest and West regions attended schools impacted by court-ordered desegregation plans at the time of the *Dowell* ruling. This perspective continues to demonstrate the predominance of desegregation plans in the South, but also highlights that significant numbers of students were impacted by court-ordered desegregation plans in other parts of the country.

Table 1.4

Students Enrolled in Districts Impacted by Dowell Ruling, 1993

Region	% of students served by districts with no court order (1993 enrollment)	% of students served by districts never released from court order (1993 enrollment)	% of students served by unitary districts (1993 enrollment)
South	60%	17%	23%
Border	80%	4%	15%
Northeast	79%	20%	1%
Midwest	87%	7%	6%
West	87%	10%	4%

The following two maps show the number of districts with a desegregation order in place in 1993 (see Figure 1.1) and the number of students attending those districts in 1993 (see Figure 1.2).

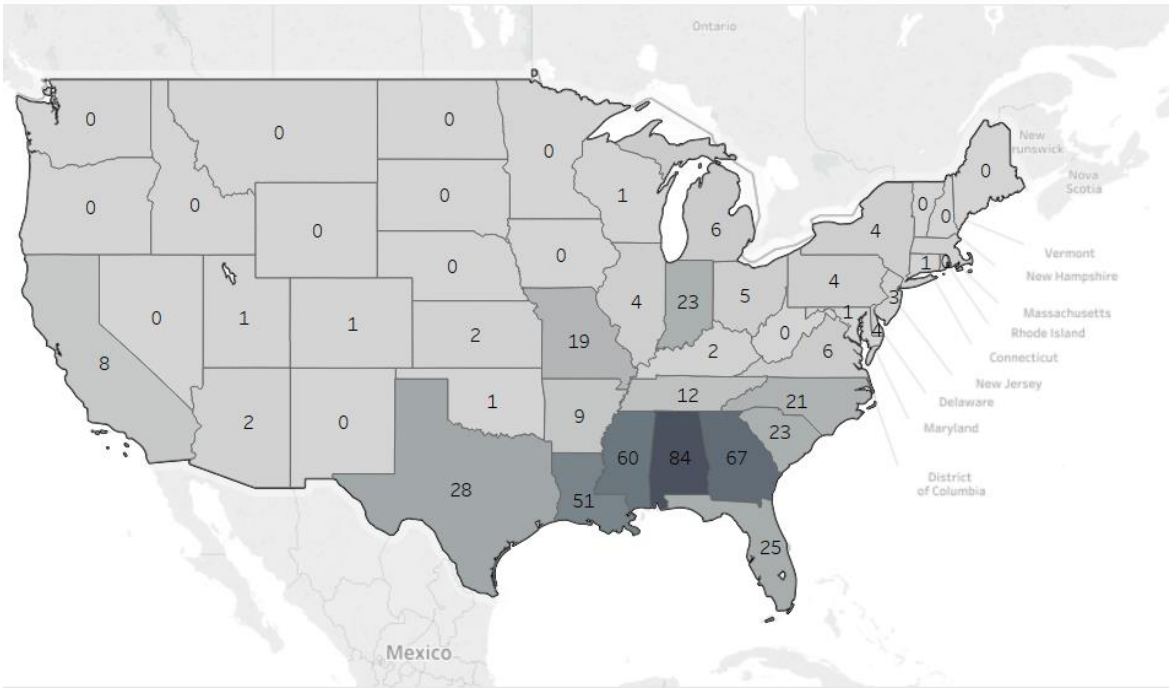

Figure 1.1. Number of Districts under Court Order by State, 1993

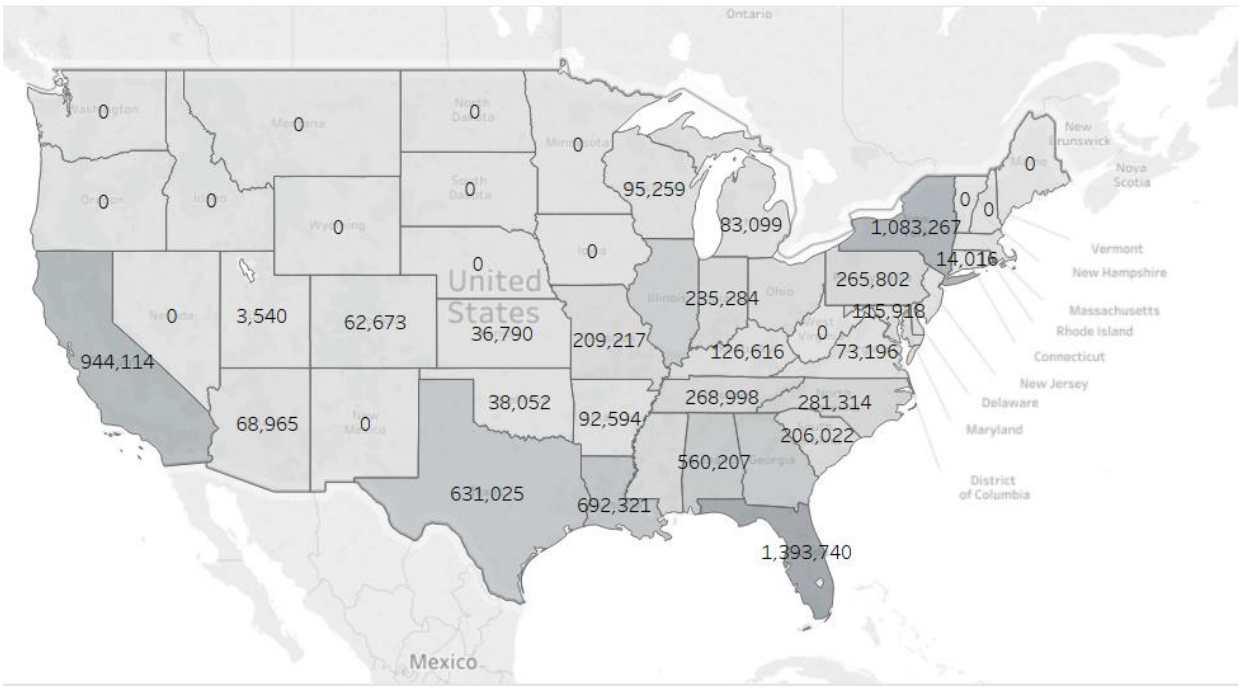

Figure 1.2. Number of Students Attending Districts under Court Order by State, 1993

District Size

The primary reason the two subsets of districts with court orders in 1990 served a disproportionately large share of the student population is that these school districts were generally larger than school districts with no desegregation order in place. In 1993, the mean enrollment in districts never under court order was 4,796 students. Districts that remained under court order had a mean enrollment of 18,666 students in 1993. The mean enrollment in unitary districts was 19,463 in 1993. For another perspective on district size, consider that while only 7% of school districts were under court order at the time of the *Dowell* ruling, 24% of districts with more than 10,000 students had a court-ordered desegregation plan in place in 1990, and 27 of the 50 largest districts in the dataset in 1993 had court orders in place at the time of the *Dowell* ruling.

Locale

In addition to contrasts in district size, districts with court-ordered desegregation plans at the time of the *Dowell* ruling were more likely to be located in the central cities or the fringe areas of cities in a given metropolitan area. While only 36% of students in the dataset attend city schools, 58% attend schools located in the central city of a metropolitan area. When the fringes of these central cities are included, 67% of districts and 83% of students impacted by the *Dowell* ruling attend schools in cities or their fringe areas. The locales of districts never under court order may be skewed by the exclusion of districts under 2,000 students, as these smaller districts may be more likely to be located outside of an urban area, and were disproportionately not under court order in 1990. Table 1.5 shows the breakdown of student enrollment by locale for the overall dataset as well as each subset analyzed in this paper.

Table 1.5

Distribution of Desegregation Cases by NCES Locale

NCES Locale Code	Total Dataset	No Court Order	Never Released	Unitary
Large City (City Population>250,000)	16%	7%	52%	34%
Mid-Size City (Central City<250,000)	20%	18%	18%	30%
Urban Fringe, Large City	18%	21%	6%	10%
Urban Fringe, Mid-Size City	11%	12%	6%	11%
Large Town (≥25000)	3%	4%	1%	1%
Small Town (2500-25000)	19%	23%	9%	7%
Rural	13%	15%	8%	7%
Total	100%	100%	100%	100%

Poverty Rate

The poverty rate in districts that were under court order at the time of the *Dowell* ruling is between 8 and 10 points higher than in districts not under court order throughout the panel. For example, in 1993, the poverty rate in districts not under court order was 15 percent, the poverty rate for districts continuously under court order was 26 percent, and the poverty rate for unitary districts was 24 percent. While the poverty rate rises and falls throughout the panel data, the gap between the sets of districts analyzed in this paper remain consistent.

Judicial Circuit

Figure 1.3 shows the geographic boundaries of the United States Court of Appeals Circuits. At the time of the Dowell ruling in 1990, 66% of the districts under court order were under the jurisdiction of either the Fifth or Eleventh circuits of the United States Court of Appeals. By 2010, every Circuit but the Fifth Circuit (37%) had released the majority of districts that had been under court order at the time of the *Dowell* decision.

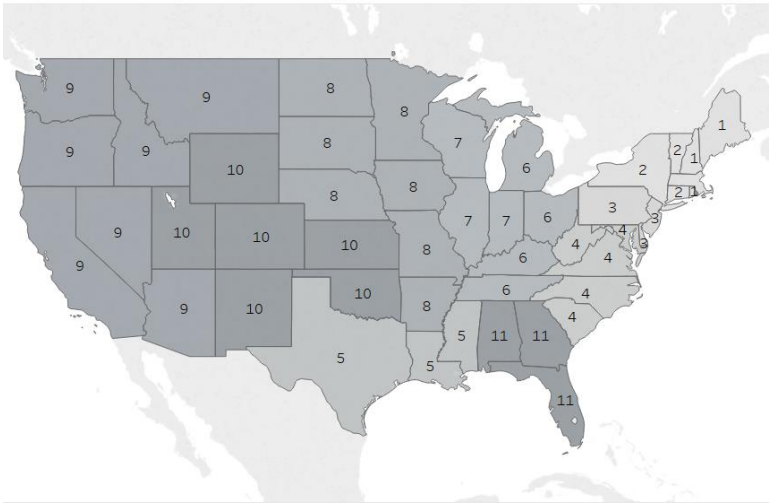

Figure 1.3. United States Court of Appeals Circuits

Comparison of District under Court Order and Unitary Districts

There are some aspects of the two subsets of districts that had court orders in place in 1990 that can also provide helpful context for exploring the research questions that are the focus of this paper. This dissertation is review of these sets of districts as having a fixed number of districts (265 districts that remained under court order and 215 that the courts declared unitary), the number of unitary districts grew over time. Table 1.6 shows the breakdown of release years for the 215 districts in this subset.

Table 1.6

Number of Districts Declared Unitary, 1991 through 2009

Year	Number of Districts Remaining Under Court Order	Number of Districts Released	Cumulative Number of Districts Released	Number of Students in Unitary Districts Released (Single Year, 1993 Enrollments)	Cumulative Number of Students in Unitary Districts (1993 Enrollments)
1991	476	4	4	123,898	123,898
1992	474	2	6	148,352	272,250
1993	472	2	8	39,014	311,264
1994	467	5	13	242,493	553,757
1995	461	6	19	140,440	694,197
1996	455	6	25	326,494	1,020,691
1997	448	7	32	170,452	1,191,143
1998	423	25	57	481,187	1,672,330
1999	415	8	65	147,467	1,819,797
2000	404	11	76	322,829	2,142,626
2001	397	7	83	621,417	2,764,043
2002	375	22	105	407,641	3,171,684
2003	360	15	120	231,385	3,403,069
2004	347	13	133	147,557	3,550,626
2005	327	20	153	203,110	3,753,736
2006	306	21	174	218,130	3,971,866
2007	285	21	195	178,288	4,150,154
2008	275	10	205	70,613	4,220,767
2009	265	10	215	52,343	4,273,110

CHAPTER 2

LITERATURE REVIEW

The Road to *Dowell* and Beyond: A Legal Context

For the past six decades, the Supreme Court's rulings have prompted significant shifts in desegregation policy. Chronologically, the Supreme Court's decisions regarding race and education form four distinct phases in the era of court-ordered desegregation. In each of these phases, the Court's rulings prompted significant legal, political, demographic, and educational shifts.

Phase One: Brown v. Board of Education, 1954-1968

The first phase of school desegregation movement, and indeed the entire era of court-ordered desegregation, rests upon the landmark case *Brown v. Board of Education* (1954). This decision signaled to America's schools and its citizens that government-imposed segregation of public schools was morally and legally unacceptable. In the first *Brown* case, the court unanimously found the "separate but equal" doctrine established in the *Plessy v. Ferguson* case to be fundamentally flawed and concluded racial segregation of public schools was inherently unequal. In the decision, Chief Justice Earl Warren noted:

> Today it is a principal instrument in awakening the child to cultural values, in preparing him for later professional training, and in helping him to adjust normally to his environment. In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, where the state has undertaken to provide it, is a right that must be made available to all on equal terms. (*Brown v. Board of Education,* 1954, p. 493)

Despite this unequivocal decision, the original *Brown* decision did not include any direction towards remedies for de jure segregation. In a second ruling the following year, the Supreme Court only concluded that desegregation occur with "all deliberate speed" (*Brown v.*

Topeka Board of Education, 1955). Unfortunately, this second ruling on *Brown* did not provide any remedies to de jure segregation, failing even to address Linda Brown's prohibition from attending an all-white school in Topeka (Chemerinsky, 2003). Many legal scholars have argued that had the lapse between the original *Brown* ruling and the Court's first foray into specific remedies for segregation in *Green v. County School Board of New Kent County* (1968) not occurred, desegregation and its subsequent integration could have taken hold more effectively and assertively pushed segregated schools districts to act immediately (Ware, 2005).

Phase Two: Intensive Desegregation, 1968-1973

The case of *Green v. County School Board of New Kent County* (1968) marked the beginning of "aggressive desegregation," wherein the Court issued its most forceful school desegregation rulings. In *Green,* the Court outlined "tangible" areas such as equal facilities and black-white ratios for both faculty and students that courts and schools could use to judge the merit of a desegregation plan (Parker, 2004). In *Swann v. Charlotte-Mecklenburg* (1971), the Supreme Court legitimized several specific strategies for desegregation, including busing, redrawing attendance zones, and creating attendance zones based significantly on racial balance. Not surprisingly, during the era in which the Courts aggressively pursued desegregation, the South became the most integrated region of the country, going from less than five percent of black students attending majority white schools in 1964 to over 35 percent in 1972 (Frankenberg, Lee, & Orfield, 2003).

Phase Three: Setbacks and Slowdowns, 1973-1991

This period of aggressive desegregation suffered its first round of serious setbacks in a trio of rulings issued by the Supreme Court in the early to mid-1970s. This trifecta of cases

marked a third phase in the desegregation movement in which the courts placed certain constraints on school desegregation remedies. First, in *Keyes v. School District No. 1, Denver, Colorado* (1973), the Court ruled that constitutional violations occurred only in districts that had a discriminative purpose in their policies and regulations (Chemerinsky, 2003). This meant that in districts where state law had not prohibited integrated schools, and no school board policy clearly created a dual system of schools, the courts could not intervene to desegregate schools (Chemerinsky, 2003). While this ruling ensured that the government could not intrude upon schools affected by segregation as the result of individual choice, it made it nearly impossible for plaintiffs to demonstrate discrimination even in cases where government policies in areas other than education directly led to increased segregation in schools.

San Antonio v. Rodriguez (1973), while not explicitly a case dealing with desegregation, created additional obstacles for educators and policy reformers advocating for the integration of schools. Plaintiffs in Texas sought to demonstrate that the state's school funding system caused inequalities in school spending between districts (Imber, 2004). Further, the plaintiffs argued that the Court should apply strict scrutiny in evaluating their equal protection claim based on the arguments that the state finance system discriminated against impoverished students and that education was a fundamental right because of its social importance (Imber, 2004). The Supreme Court, in a 5-4 opinion, determined that poverty is not a suspect classification and thus discrimination against the poor need meet only rational basis scrutiny. As Erwin Chemerinsky explains, "The Court explained that where wealth is involved, the Equal Protection Clause does not require absolute equality or precisely equal advantages" (2003, pp. 1611-1612). Even more importantly, for the first time, the Court stated

that education was not a fundamental right guaranteed by the federal Constitution (Imber, 2004).

The *Rodriguez* decision affected the integration movement by barring districts from seeking judicial intervention when seeking equal opportunity (Chemerinsky, 2003). As white flight made intra-district integration increasingly difficult, large urban districts had to compete with neighboring school districts. Because the central core cities throughout America served a disproportionate number of poor students relative to the surrounding school districts, this made it difficult to provide a level of educational services that white, middle class parents would consider for their children. By denying education status as a fundamental right guaranteed by the Constitution, *Rodriguez* also effectively barred racially isolated school districts from seeking fiscal equity in federal courts.

The most damning of the three cases decided in the 1970s was *Milliken v. Bradley* (1974). In *Milliken,* the district courts ordered the use of inter-district integration in order to desegregate the Detroit schools. The district court reasoned that because of significant white flight to the surrounding districts of Detroit, meaningful integration was only possible if students from these districts were required to attend Detroit schools. The Supreme Court ruled in a 5-4 decision that before a district court can impose a "cross-district remedy, it must first be shown that there has been a constitutional violation within one district that produces a significant segregative effect in another district" (*Milliken,* 1974, p. 418). The *Milliken* decision restricted desegregation to the racial balancing of students within a school district regardless of that district's overall racial imbalance. Regarding the *Milliken* decision, legal scholar Lawrence Friedman stated:

> The world was made safe for white flight. White suburbs were secure in their grassy enclaves.... Official, legal segregation indeed was dead; but what replaced it was a deeper, more profound segregation ... Tens of thousands of black children attend schools that are all black, schools where they never see a white face; and they live massed in ghettos, which are also entirely black. (Friedman, 2002, p. 296)

This combined impact of this trio of court cases substantially dampened the initial push for desegregation, particularly outside of the South. Many legal scholars point in particular to *Rodriguez* and *Milliken* as particularly devastating decisions for advocates of meaningful integration of schools. Dennis Parker (2004) points out:

> In *Rodriguez* and *Milliken*, the Supreme Court's treatment of the educational rights of the poor and their discussion of education in general seemed in many ways fundamentally at odds with the broad, democratic view of education outlined in the *Brown* decision. In many respects, *Rodriguez* and *Milliken* seemed to betray the ideals of true equality established in *Brown*. (p. 1075)

In the years after the first *Milliken* decision, courts attempted to use a variety of remedies to repair the damage of de jure segregation in the face of increasing racial imbalance. While the original *Milliken* decision prevented crossing district boundaries to achieve equity in student populations, the Supreme Court focused on intra-district remedies in the second *Milliken v. Bradley* decision (1977). The Court affirmed that the school district of Detroit and the state of Michigan would have to provide additional compensatory and remedial programs in several critical areas, including reading, teacher professional development, testing, and counseling (*Milliken v. Bradley*, 1977). This decision encouraged the use of remedial strategies that focused on closing achievement gaps between black and white students rather than ameliorating racial disparities in student enrollment. While federal courts continued to monitor desegregation cases throughout the late 1970s and 1980s, the desegregation movement languished throughout this period. Congress took its last

pro-desegregation action in 1972, and the last federal desegregation aid program was ended by the Reagan administration in 1981 (Frankenberg et al., 2003).

Phase Four: The Post-Unitary Era, 1991-2007

Beginning in 1991, a new trio of Supreme Court cases began to actively dismantle decades of court-ordered desegregation plans. The first case, *Board of Education v. Dowell* (1991), dealt with the termination of court-ordered desegregation cases. Oklahoma City Public Schools had employed a system of de jure segregation, and court-ordered desegregation remedies had not commenced until 1972. However, a federal court order successfully desegregated the Oklahoma City public schools (Chemerinsky, 2003). While the court initially found that the board had remedied the effects of segregation in 1977, plaintiffs asked the Court to resume active oversight of the district in 1985 (*Dowell,* 1991), and the Court of Appeals for the Tenth Circuit granted their request. While Oklahoma City Public Schools fought for the next several years to have the Court release the district from oversight, plaintiffs' lawyers presented compelling evidence that several schools would resegregate if the court removed its requirements. Nonetheless, the Supreme Court held that once a school system had achieved unitary status—a term the Court introduced to indicate that a district had repaired the consequences of a de jure system of segregation— a federal court's desegregation order should end even if termination would lead to resegregation (Chemerinsky, 2003). The Court failed to specifically define what constituted unitary status, pointing to assurances that school boards had "complied in good faith" and "the vestiges of past discrimination have been eliminated to the extent practicable" (cited in Chemerinsky, 2003).

On the heels *Dowell,* the Supreme Court allowed district courts to end supervision of certain parts of a desegregation order even while other parts of the order were still active in

Freeman v. Pitts (1992). In *Freeman*, the Court allowed a Georgia school district to build a new facility in an attendance zone that was predominately white despite being under court order that ordered the district to desegregate. The Supreme Court's decision allowed the district to move ahead with this plan despite the fact that the district court had not yet granted the school system unitary status in other areas such as black-white ratios among the faculty (Chemerinsky, 2003). The *Freeman* case allowed districts to engage in piecemeal dismantling of their court-ordered desegregation plans.

The final case that the Supreme Court considered in the second wave of cases was *Missouri v. Jenkins* (1995). In *Jenkins,* the Supreme Court made three significant rulings. First, the Court used the *Milliken I* case to prohibit the Kansas City, Missouri school district from implementing a plan to recruit students from outside of the district to attend Kansas City schools because no inter-district violation had occurred (Chemerinsky, 2004). The Court also prohibited using desegregation funds to increase teacher salaries to attract better-qualified teachers to the district. Most notably, the Court declared, "improvement in test scores was 'not necessarily required for the State to achieve partial unitary status as to the quality of education programs'" (*Jenkins,* quoted in Imber, 2004, p. 223). This meant that disparity in test scores was not a basis for the continuation of a federal court order, and that once a district had complied with a desegregation order, the court should grant unitary status regardless of student outcomes (Chemerinsky, 2004).

Advocates of integration often point to *Dowell* and subsequent cases as the cause of the resegregation era of the 1990s (Chemerinsky, 2003; Orfield & Lee, 2004). Indeed, Erwin Chemerinsky declared:

> The three cases—*Dowell*, *Freeman*, and *Jenkins*—together have given a clear signal to lower courts: the time has come to end desegregation orders, even when the effect could be resegregation. Lower courts have followed this lead. Indeed, it is striking how many lower courts have ended desegregation orders in the last decade, even when provided with clear evidence that the result will be increased segregation of the public schools. (p. 1618)

These cases set the stage for school districts to seek unitary status throughout the 1990s and into the 21st century.

Phase Five: Curtailed Voluntary Integration Plans, 2007-present

While many districts were still following court-ordered desegregation plans through the 1990s, other school districts had enacted voluntary integration plans in the late 20th and into the early 21st century. Some districts, such as Jefferson County, Kentucky (home to Louisville) adopted voluntary desegregation plans after the conditions of court-ordered plans were met, while other districts such as Seattle had adopted integration plans without any court involvement. In each of these districts, student assignment policies used race along with a variety of other factors when assigning students to schools through a district-wide choice program. Both of the districts' voluntary desegregation plans were challenged in court and these challenges were simultaneously considered by the United States Supreme Court in *Parents Involved in Community Schools v. Seattle School District No. 1* and *Meredith vs. Jefferson County Board of Education* (2007)). Roslyn Mickleson (2008) summarized the decisions in the following passage:

> In *Parents Involved in Community Schools v. Seattle School District No. 1*, the Court concluded that the ways Seattle and Louisville school districts used an individual student's race as a component of their voluntary desegregation student assignment plans were unconstitutional because the plans were insufficiently narrowly tailored to meet the Court's standards for strict scrutiny. At the same time, five Justices recognized the state's compelling interest in diverse public schools and in overcoming the racial isolation within them. Justice Kennedy's opinion suggested several specific

> strategies that school districts might employ to achieve diverse schools. (pp. 1173-1174)

In this decision, Justice Kennedy's opinion provided the clearest indication of how districts might proceed with voluntary desegregation plans in light of the *PICS* ruling. In the 4-1-4 decision, Justice Kennedy agreed with the justices opposed to upholding the voluntary desegregation plans in that they were not "narrowly tailored" under the test of "strict scrutiny," and the majority of justices found that these circumstances "did not articulate a justification for using race in a mechanical way" (Ogletree & Eaton, 2007, p. 90). At the same time, Justice Kennedy sided with the pro-integration justices by noting that school districts had a "compelling interest" in promoting racial diversity (Parents Involved in Community Schools, n.d.). Specifically, Justice Kennedy noted, "A compelling interest exists in avoiding racial isolation, an interest that a school district, in its discretion and expertise, may choose to pursue. Likewise, a district may consider it a compelling interest to achieve a diverse student population" (cited in Ogletree & Eaton, 2007, p. 292). Justice Kennedy also listed several instances in which districts could proactively promote racial diversity with race-conscious strategies, including zoning, school site selection, resource allocation, and student recruitment (Liu, 2008, p. 66).

Despite this opening for voluntary integration plans created by Justice Kennedy's opinion in the *PICS* case, school districts face murky waters when considering voluntary integration plans. Since the *PICS* decision, courts have struck down numerous voluntary desegregation plans, and in the case of a Tucson, Arizona, unitary status case, questionably applied the *PICS* decision to terminate a court order focused on ending de jure segregation (Ogletree & Eaton, 2007).

In 2011, the United States Department of Justice and United States Department of Education's' Offices of Civil Rights issued a document entitled "Guidance on the Voluntary Use of Race to Achieve Diversity and Avoid Racial Isolation in Elementary and Secondary Schools" (Ali & Perez, 2011). This document outlined ways that districts can use either non-racial data (such as socioeconomic level or parents' educational attainment) or generalized-race data at the feeder school or zip code level to implement strategies that lead to decreasing racial isolation (Ali & Perez, 2011, p. 6). The report also provides practical applications of the permissible strategies outlined by Justice Kennedy in the *PICS* decision. Despite this guidance, numerous researchers and legal scholars point to what Frankenberg and DeBray (2011, p. 5) refer to as the "chilling effect" that the *PICS* decision had on districts implementing or seeking to implement voluntary integration plans (Frankenberg, 2014; Ryan, 2007). For districts that seek unitary status in the post-*PICS* era, they may find themselves not able to continue individual components of their mandatory desegregation plans on a voluntary basis after seeking unitary status. These decisions are made particularly complex because the *PICS* decision—through its use of a "colorblind" approach to crafting education policy—seems to prohibit school districts from taking race into account, even if other policies require districts to improve outcomes measured through race-disaggregated metrics. As Darby and Saatcioglu (2014) noted:

> While Parents Involved had little impact in practice on desegregation—since much of the momentum for school desegregation had already been lost—it had considerable implications for law and policy orientation because it nullified race as an essential frame of reference in examining educational inequality and diminished the relevance of group-rights in developing remedies. (p. 96)

An Overview of Social Science Research on Desegregation and Integration

In addition to the moral, ethical, and legal arguments against school segregation, many theories in social science posit that segregated schools have a harmful effect on the short- and long-term outcomes of students, and therefore desegregation ameliorates the harmful effects of racially segregated schools. Because of the intensive focus on the social science research regarding segregation and racial diversity in schools leading up to the Seattle and Louisville Supreme Court cases, several metaanalyses about this research were conducted in the past 10 years, as well as several important new findings that have emerged since the *PICS/Meredith* decision. These comprehensive reviews reveal the "striking contrasts in the scope, breadth, quality, age, and interpretations of the social science research literature" (Mickelson, 2008, p. 1175). When looking at short- and long- term student outcomes, R.A. Mickelson shared the following information in her 2008 work synthesizing the amicus curae briefs examining the social science related to segregation for the *Parents Involved* and *Meredith* cases (see Figure 2.1).

Domain of Outcome	Short Term	Long Term
Academic	• Achievement (Grades, test scores) • High School graduation	• Educational Aspirations • Educational Attainment
Intergroup Dynamics	• Interracial peers • Reduced prejudiced and fear, and stereotypes	• Break in the intergenerational perpetuation of racial hostility and fears
Life Course		• Occupational attainment • Integrated neighborhoods • Integrated workplace • Preparation for citizenship in multiracial democracy

Figure 2.1. Summary of Benefits of Student Integration Plans (Mickelson 2008, p. 1184)

When looking at the social science research about student outcomes, many of the recent reviews of the research have noted some general trends in the evolution of research about segregation and student outcomes over the six decades since the *Brown* decision. First, the quality of data available to researchers has become much more detailed and comprehensive (Linn & Welner, 2007) as the data have allowed researchers to employ increasingly sophisticated forms of empirical analysis on student outcome and racial diversity data (Mickelson & Nkomo, 2012). This in turn has led to research that is able to look more specifically at causal relationships between segregation and student outcomes (Hanushek, Kain, & Rivkin, 2002).

Earlier research often called into question any explicit connection between racial segregation and academic achievement (Coleman et al., 1966). These earlier studies often examined the possibility of a positive association between the implementation of a desegregation order and improved levels of academic achievement (Linn & Welner, 2007). As social scientists and statisticians developed increasingly sophisticated statistical models, compelling new results have been produced using data from these early studies. For example, Borman and Dowling (2010) employed hierarchical linear modeling (HLM) to reanalyze the data from James Coleman's landmark 1966 report. This reanalysis overturned the long-held findings of the Coleman report, which stated that school characteristics were secondary in determining a child's level of reading proficiency. Instead, Borman and Dowling found that up to 40% of the variance in reading proficiency was attributed to school characteristics, and that students attending racially segregated schools were much more likely to demonstrate lower levels of reading ability.

In other cases, recent studies have used more robust datasets to link segregation and student achievement. In these studies, the relationship between segregation and academic achievement is often stated as a negative relationship between higher levels of segregation and lower levels of academic achievement. For example, Hanushek, Kain, and Rivkin (2002) examined Texas state-level data and found that black students' academic achievement suffers in schools with higher percentages of black students, and especially for students with higher initial levels of academic proficiency. Rumberger and Wilms (1992) found similar results across schools with varying levels of segregation in California. In another study looking at statewide data in Florida (Borman et al., 2004), researchers found a strong negative relationship between high levels of segregation and performance on state accountability tests, even after controlling for other demographic, socioeconomic, and policy factors that impacted student achievement.

In their meta-analysis of the amicus briefs filed for the Seattle/Louisville cases, Linn and Welner (2007) noted that there were several consistent findings across the research examining the relationship between racial diversity and academic achievement:

> Overall, the research evidence supports four primary conclusions regarding the effects of racial diversity on academic achievement. First, there is a relatively common finding that White students are not hurt by desegregation efforts or adjustments in racial composition of schools. Second, although the apparent magnitude of the influence is quite variable, there is a relatively common finding that African American student achievement is enhanced by less segregated schooling. Third, these positive effects for African American students tend to be larger in earlier grades than in later grades and larger in studies using experimental designs or longitudinal data sets than in cross-sectional studies or studies that lack control groups. Fourth, the earliest studies tend to focus on the effects of court-ordered desegregation, and therefore, to combine the impacts of racial composition per se with various policy actions undertaken to bring about desegregation. The results of these earlier estimates appear to be more variable than studies focused solely on variations in racial composition. (pp. 43-44)

Recent research findings generally find a similarly positive relationship between desegregation and educational attainment, and a corresponding negative relationship between segregation and educational attainment. When academic outcomes are considered, several studies (Guryan, 2004; Johnson 2011) found that desegregation led to higher levels of educational attainment as measured by high school graduation rates. Conversely, Saatcioglu (2010) and Lutz (2011) found evidence of increased dropout rates once court-ordered desegregation plans ended. Researchers also examined relationships between racial segregation and postsecondary access and attainment. Yun and Kurlaender (2004) found that students of color from racially segregated schools in California had lower post-secondary aspirations than students of color from schools that are more diverse. Teranishi and Parker (2010) found that students of color who attend segregated high schools have more difficulty when attempting to enroll in postsecondary education. Additionally, the reintroduction of segregation was related to decreases in college achievement for students of color while offering no benefits to white students (Giersch, Bottia, Mickelson, & Stearns, 2016).

Reardon and Owens (2014) noted that much of the social science research that has been conducted is concerned with the association between school composition and student outcomes, which presents a somewhat limited view of the impact of school segregation. Instead, Reardon and Owens argued for a model in which segregation might affect the distribution of the individual resources and mechanisms that go into producing student outputs.

Research on Unitary Status to Date

Given that a critical mass of data about unitary districts has emerged only in the past ten to fifteen years, the body of scholarly research focused on ending court-ordered

desegregation remains small compared to the copious body of research focused on school desegregation as a whole. However, several notable studies have focused on districts granted unitary status. Most of these studies focused on questions examining the relationship between the termination of a court-supervised desegregation plan and evidence of resegregation in these districts.

Two early studies examining the impact of unitary status on districts' racial composition established several influential frameworks for exploring questions related to the dismissal of court-ordered desegregation. Byron Lutz, in a 2005 paper for the Federal Reserve, found that districts saw modest increases in segregation in the years following the dismissal of a court order. Specifically, Lutz found that "approximately 1/2 of the decrease in racial segregation achieved by the plans' implementation is undone" (p. 26). Additionally, Lutz's paper looked at research questions beyond racial composition, examining both dropout rates and private school enrollments and the relationship to unitary status. Lutz's paper was important because it established one of the first national datasets of districts that had court orders dismissed, though it is worth noting that Lutz built off earlier data collection conducted by Logan and Oakley (2004). Lutz found that schools outside the South saw increases in the black dropout rate and black private school enrollment rate after dismissal of court orders. These findings are also notable for the regional disaggregation Lutz built into his analysis, particularly because they produced findings that were notable outside of the South.

Charles Clotfelter, Jacob Vigdor, and Helen Ladd (2006) conducted another early study that informed and influenced future studies of unitary districts. Clotfelter, Ladd, and Vigdor examined changes in both racial isolation and racial imbalance in the 100 largest districts in the South and Border regions. Clotfelter and his colleagues found increases in the

racial isolation and imbalance, but attributed these findings to demographic changes in the metro areas examined. One notable exception was for districts that had cases decided under the jurisdiction of the federal Fourth Circuit Court of Appeals, where Clotfelter, Ladd, and Vigdor found that increases in racial isolation and imbalance could be attributed to the termination of court cases. This study was the first focusing on court jurisdiction as part of the analysis of the impact of courts granting unitary status, and this dimension was incorporated in several future studies.

A government report published in 2007 by the United States Commission on Civil Rights found small but not statistically significant increases in levels of segregation after courts released districts from desegregation plans. However, this study reviewed data from a calendar year perspective without taking into account the amount of time that had elapsed since the termination in court order. Other researchers (notably Reardon, Grewal, Kalogrides, & Greenberg, 2012) have noted should lead to a cautious interpretation of the commission report's results.

In 2009, An and Gamoran published a study that paired 65 unitary districts with non-unitary similar districts that remained under court order in the same state. An and Gamoran found that while there is little evidence of resegregation overall, unitary status did increase school segregation and left unitary districts more vulnerable to broader trends in residential segregation.

In 2011, Lutz revisited the topic of unitary school districts and found that districts released from court order gradually resegregate for nearly a decade following the terminating court order. Further, using an event-study methodology, Lutz was able to establish a much stronger causal link between the declaration of unitary status and an increase in segregation

indices (Lutz, 2011). Surprisingly, Lutz also found that whites return to districts once unitary status is granted. Specifically, Lutz noted:

> Dismissal appears to pull white students back into districts previously under court order in the South. This phenomenon may alter metro area demographic patterns and it may serve to blunt the negative impact of dismissal, both by moderating the increase in segregation and by increasing the resources available to formerly desegregated school districts. (Lutz, 2011, p. 165)

More recent work by Reardon, Grewal, Kalogrides, and Greenberg (2012) also demonstrated a link between the termination of court-ordered desegregation and a rise in segregation. Reardon was able to look at a large panel of data that was evenly balanced between districts that had been released from court order and those that had remained under court order, with over 200 districts represented in each category. Using the most sophisticated empirical and statistical model employed to date, Reardon and his colleagues were able to look at segregation levels across regions, federal appeals circuits, and individual grade levels. This study also found that segregation gradually increased after courts terminated desegregation orders relative to districts that remained under court order and determined a causal link between the declaration of unitary status and this rise in segregation levels. Reardon et al. noted:

> Segregation levels grow fastest among elementary schools, which typically draw from smaller (and therefore more homogeneous) catchment areas under neighborhood-based assignment plans, and slowest among high schools. In addition, segregation grows faster in districts where the pre-release school segregation levels were lowest. Because low pre-release school segregation suggests that a desegregation plan was particularly effective, this suggests that segregation rises most quickly following release in those districts where court-ordered desegregation was most effective at reducing segregation. (Reardon et al., 2012, pp. 899-900)

The Reardon et al. study also notes that resegregation was most pronounced in districts in the South and in elementary grades.

This research has generated a considerable amount of evidence that unitary status increases segregation levels. Importantly, most of these studies have concluded that this "resegregation" is unique to districts that were following court-ordered desegregation plans at the time of the *Dowell* ruling, and that desegregation has largely continued to decrease across public schools as a whole. With the exception of Lutz's work, these studies also focus exclusively on the impact of unitary status on a district's racial composition. An and Gamoran (2016) noted the charge for further research by Reardon and his coauthors:

> Reflecting on recent increases in racial isolation, Reardon et al. (2012) concluded, "We do not know, however, whether the increases in school segregation induced by the end of court-ordered desegregation plans lead to . . . increases in racial educational disparities. This is an important topic for future work" (p. 901). (Reardon et al., cited in Gamoran and An, 2016, p. 45)

CHAPTER 3

ANALYSIS OF RACIAL COMPOSITION

The most obvious, and potentially concerning, impact of a unitary ruling is its potential to change the racial composition of the schools in the city. This concern about a new student reassignment plan causing schools in Oklahoma City to revert to segregated status was the impetus for the *Dowell* case that introduced the notion of unitary status to the legal system in 1991. This chapter examines this potential relationship between the courts' termination of desegregation plans and increases in segregation in post-unitary school districts.

Based on these circumstances, this chapter focuses on the following research questions:

1. How has racial composition of post-unitary districts shifted since the *Dowell* ruling in 1991?
2. How do these changes compare to changes among all public schools as well as districts that remain under court order?
3. Are any changes in racial composition related to the termination of court orders, and if so, how long does it take these changes to emerge?

Opponents of court-ordered desegregation plans made their case to terminate judicial oversight of desegregation plans by highlighting the amount of time, energy, and resources that districts put into complying with these plans even though by the 1980s, many of these plans had plateaued in terms of integrating school districts. At the same time, opponents of court-ordered desegregation plans lamented the local control and autonomy that school districts had to sacrifice due to court oversight of desegregation plans, arguing that districts

under court mandate continued to pay for segregationist policies that districts adopted and abandoned decades before.

Those arguing for the continuation of court-ordered desegregation plans noted the gains that had been made under the plans, the safe space that court-ordered desegregation plans gave to school district and other local officials when implementing controversial measures intended to reduce segregation and its undesirable outcomes, and the historical lack of initiative to combat segregation prior to the court's involvement. Without court-ordered desegregation plans, advocates argued, school districts and the communities they represented might not have the political will to continue policies that reduced segregation and maintained higher levels of integration. If school districts discontinued policies embedded within the court-ordered desegregation plans, segregation would return to these districts, and the absence of court oversight would allow districts to make policy and program decisions that were either explicitly or implicitly inequitable to minority students (An & Gamoran 2009; Clotfelter et al., 2006; Mickelson, 2005; Reardon et al. 2012; Frankenberg, Lee, & Orfield, 2003).

This chapter tests the hypotheses of advocates for court-ordered desegregation plans. If advocates for court-mandated desegregation plans are correct, then we should see an increase in racial inequality and in key components of education policy and programming, such as spending on instruction in these school districts. Over time, these inequitable decisions could result in a decrease in educational outcomes for students in districts that had been under court order at the time of the Supreme Court's *Dowell* ruling. This broad survey of changes in racial composition, district fiscal policy, and educational outcomes does not allow for a deep examination of the decision-making processes in individual districts that saw their court-ordered desegregation plans terminated. However, evidence of a pattern of

resegregation, changes in resource allocation, or in educational outcomes would provide other researchers with a focal point and a backdrop to examine individual districts more carefully.

Shifts in Racial Composition, 1993-2013

Several researchers have seen changes in the racial composition of desegregated districts as paralleling changes in the larger public school population (Logan, Oakley, & Stowell, 2006; Clotfelter et al., 2006). A reasonable test of any hypothesis examining changes in unitary districts, therefore, should also examines changes during the same period in all public schools. Additionally, districts that courts have ordered to desegregate may share unique characteristics related to their unitary status, which also requires examining changes in racial composition in these districts as well as those districts that were declared unitary. Because of these characteristics, the analyses in this chapter break districts into three distinct subsets:

1. The subset of districts that were not following a court-ordered desegregation plan at the time of the *Dowell* ruling in 1991. This is by far the largest of the three subsets of districts, with 6,087 of the 6,567 districts included in the dataset falling into this subset of districts in 1993.
2. The subset of districts that were following a court-ordered desegregation plan at the time of the *Dowell* ruling, and that remained under court order through 2010. This subset includes 265 of the 6,567 districts in the dataset.
3. The subset of districts that were following a court-ordered desegregation plan at the time of the *Dowell* ruling, but were granted unitary status by the courts sometime between 1991 and 2010. This subset includes 215 of the 6,567 districts in the dataset.

This schema helps establish a model for analyzing changes in racial composition and segregation levels across these three subsets of school district. Table 3.1 provides a snapshot comparison of racial composition in 1993 and 2013, and in the changes in that composition both for all school districts and specifically for districts implementing court-ordered desegregation plans.

Table 3.1

Summary of Racial Composition, 1993 and 2013

		Year		
		1993	2013	Change
All Schools	Mean White Enrollment (pct.)	61.1	50.7	-10.4
	Mean Black Enrollment (pct.)	15.9	15.8	-0.1
	Mean Hispanic Enrollment (pct.)	12.0	24.5	12.5
	Mean Asian Enrollment (pct.)	3.1	4.9	1.8
	Total Number of Students	38,263,328	45,138,347	18.0
Never Under Order	Mean White Enrollment (pct.)	68.0	55.7	-12.3
	Mean Black Enrollment (pct.)	10.5	11.7	1.2
	Mean Hispanic Enrollment (pct.)	10.4	23.7	13.3
	Mean Asian Enrollment (pct.)	3.0	4.9	1.9
	Total Number of Students	29,130,662	35,578,823	22.1
Never Released	Mean White Enrollment (pct.)	34.9	29.9	-5.1
	Mean Black Enrollment (pct.)	32.4	29.3	-3.1
	Mean Hispanic Enrollment (pct.)	22.3	32.6	10.3
	Mean Asian Enrollment (pct.)	3.8	5.8	2.0
	Total Number of Students	4,946,709	4,966,772	0.4
Released at Some Point	Mean White Enrollment (pct.)	44.3	34.1	-10.2
	Mean Black Enrollment (pct.)	33.4	33.2	-0.1
	Mean Hispanic Enrollment (pct.)	11.1	25.8	14.7
	Mean Asian Enrollment (pct.)	2.8	3.8	1.1
	Total Number of Students	4,185,957	4,592,752	9.7

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

Table 3.1 first reports demographic trends for all schools. In 1993, the universe of students in the dataset consisted of 29,130,662 students: 61% percent of students identifying as white, just under 16% of students identifying as African-American, 12% of students identifying as Hispanic, and 3.1% of students identifying as Asian. Over the next 21 years, the number of students included in the dataset increased just over 22%, or about 6.8 million students. There are notable shifts in the racial composition of the dataset over the 21-year period as well. The percentage of white students dropped by 10.4%, and was just barely the majority in 2013, with 50.4% of students identifying as white that year. While the proportion of black students remained essentially flat, the proportion of Hispanic students more than doubled, from 12 to 24.5 percent. There was a small increase of 1.8 in the share of students identifying as Asian.

Not surprisingly, the demographic shifts in the largest subset in the sample, school districts that were not under court order at the time of the *Dowell* ruling, largely parallel the trends reported for the entire sample. There is substantial overall growth in the number of students, and a significant decline in the percentage of the student population made up of white students. Additionally, there is a significant increase in the proportion of the student population made up of Hispanic students, and a small increase in the share of Asian students. While the proportion of the entire sample consisting of African-American students is essentially flat, there is a small increase in the proportion of African-American students in the subset of schools not under court order, increasing by 1.2% over the 21-year period. Asian enrollment increased by 1.9% over the same period.

There are several notable differences when comparing trends from districts that were under court order at the time of the *Dowell* ruling and remained under court order until at least

2010. First, enrollment in these districts was virtually flat over the 21-year period analyzed, indicating that shifts in racial composition are not tied to overall shifts in the size of the student population. Additionally, these districts enrolled a much higher share of students of color in 1993 than districts not under court order. Districts under court order were already majority minority in 1993, with white students making up 35% of total enrollment, black students making up 32%, Hispanic students making up 22% of the population, and Asians making up 3.8% of the total enrollment. Not only did these districts have different racial compositions in 1993, but also racial composition shifted in different ways through 2013. The share of white students declined, but not as dramatically as in districts not under court order, with a 5-point decline in districts under court order compared to a 12-point decline in districts not under court order. Districts under court order also saw a modest decline of 3.1 points in the share of African-American students, and the smallest increase in the share of Hispanic students of any of the subsets of districts (10.3 points). A slight increase in the proportion of students identifying as Asian parallels the trend in the other subsets of districts.

The shifts in racial composition across unitary districts followed the shifts for all schools, but with less growth in the student population than for the total sample. While the 9.7 point increase in overall student population was roughly half that of the sample overall, it is still notable when compared to the flat growth rate of districts that remained under court order after the *Dowell* ruling. Unitary districts also experienced declines in white enrollment at about the same rate as all districts (a 10.2 decline for unitary districts), a stable share of black enrollment, and a significant increase in Hispanic enrollment of 14.7 points, the largest increase in Hispanic enrollment of any of the subsets.

This initial review of racial enrollment patterns across the period studied highlights several important distinctions between the subsets of districts. First, districts under court order at the time of the *Dowell* ruling had much lower shares of white enrollment in 1993. Both unitary districts and districts that remained under court order were already on average majority-minority in 1993. This means that in many of these districts, substantial white flight had already occurred, so it was not surprising that declines in white enrollment are less dramatic than in districts not under court order at the time of the *Dowell* ruling. At the same time, the low levels of white enrollment at the beginning of the study period means that any declines in white enrollment are likely to have a greater impact in terms of racial isolation within both unitary districts and districts under court order.

In addition to the differences in white enrollment patterns, districts under court order did not increase their student enrollment, unitary districts experienced moderate growth, and districts not impacted by *Dowell* experienced the greatest increases in student enrollment. This is significant because it suggests that districts not under court order may have experienced demographic shifts due to substantial growth driven by students of color. In districts consistently under court order, however, there is no corresponding growth. This means that the decrease in white enrollment was likely due more to the continued exit of white families out of these school systems rather than a stable number of white students representing a smaller share of the total enrollment in a larger overall student population. Therefore, the argument that societal demographic shifts driving resegregation through the 1990s and 2000s made by some researchers does not seem to apply to districts under court order during that period (An & Gamoran, 2009; Logan, 2004).

While the shifts in enrollment patterns nationally illustrates some differences between desegregation districts and the public school universe as a whole, these differences are even more striking when examined at the regional level. Table 3.2 summarizes these regional shifts. The enrollment in districts following court orders grew more slowly in every region of the country, but actually showed declines across desegregation districts in the Border, Northeast, and Midwest regions of the country. While all regions showed significant declines in the share of the student population made up of white students, these regions with declining overall enrollment in desegregation districts also saw the most significant drop in the proportion of the student population made up of white students. By 2013, only approximately one out of five students in districts under court order were white in the Northeast and West regions of the country.

For the districts under court order in most regions, black enrollment remained relatively flat between 1993 and 2013, and there were substantial increases in the proportion of the student population made up of Hispanic students. Interestingly, the West region showed a decline in the proportion of black students enrolled in desegregation districts, and these districts were majority Hispanic by 2013. Given the history of desegregation in the West, these shifts in demographics are notable but not necessarily surprising.

Table 3.2

Summary of Regional Enrollment by Desegregation Status, 1993, and 2013

Region	1993 Enrollment	2013 Enrollment	Change	Pct. Change
South				
Never under Order	7,568,220	10,037,253	2,469,033	32.6%
Never Released	2,095,524	2,219,691	124,167	5.9%
Released at Some Point	2,917,938	3,402,502	484,564	16.6%
Border				
Never under Order	2,218,664	2,719,881	501,217	22.6%
Never Released	120,347	118,916	(1,431)	-1.2%
Released at Some Point	424,620	418,498	(6,122)	-1.4%
Northeast				
Never under Order	5,265,389	5,740,971	475,582	9.0%
Never Released	1,326,719	1,241,476	(85,243)	-6.4%
Released at Some Point	82,932	70,789	(12,143)	-14.6%
Midwest				
Never under Order	7,175,559	7,196,305	20,746	0.3%
Never Released	615,730	575,092	(40,638)	-6.6%
Released at Some Point	469,564	386,535	(83,029)	-17.7%
West				
Never under Order	6,962,738	9,910,095	2,947,357	42.3%
Never Released	788,389	811,597	23,208	2.9%
Released at Some Point	290,903	314,428	23,525	8.1%
Total				
Never under Order	29,190,570	35,604,505	6,413,935	22.0%
Never Released	4,946,709	4,966,772	20,063	0.4%
Released at Some Point	4,185,957	4,592,752	406,795	9.7%

Desegregation Indices

An examination of desegregation indices provides a deeper layer of analysis to identify differences between all schools, schools implementing court-ordered desegregation

plans at the time of the *Dowell* ruling, and districts that had terminated those court orders since 1991. Social scientists have developed segregation indices over the past 75 years in order to better measure differences between groups of people in social science work (Reardon & Firebaugh, 2002). James and Tauber (1985) proposed four criteria for analyzing the quality of segregation measures:

- Size invariance –The index should be unaffected by the size of the area(s) used for analysis. For example, the same picture should emerge nationally and locally.
- Organizational equivalence –The index should be unaffected by changes in the number of sub-areas, by combination for example of two sub-areas on the same "side" of the line of no segregation.
- Principle of transfers –The index should be capable of being affected by the movement of one individual from sub-area to sub-area.
- Composition invariance –The index should be unaffected by scaling of columns or rows, through increases in the 'raw' figures which leave the proportions otherwise unchanged. (James & Tauber, 1985, cited in Taylor, Gorard, & Fitz, 2000, p. 2)

Over the past several decades, researchers have frequently relied on these criteria in order to gauge the validity of various segregation indices.

Also during the 1980s, Massey and Denton evaluated the qualities of various binary measures of segregation on several factors—with the most frequent dimensions reflected in research about racial segregation examining the dimension of evenness and exposure (Massey & Denton, 1988). Massey and Denton (1988), Massey (2012), Wilkes and Iceland (2004), and others argued that rather than seeking to find a single, "correct" measure of segregation, researchers benefit from calculating multiple measures of segregation to examine the extent of segregation from multiple perspectives. In fact, Massey and Denton (1989, 1993) have labeled instances where multiple measurements document that a group is segregated as instances of "hypersegregation." Reardon and Firebaugh (2002) pointed out that while many of the measures outlined by Massey and Denton do an admirable job of quantifying segregation

between two different groups of people—white and black students, for example—there are more sophisticated measures that can take the segregation between multiple groups of people into account when calculated. In their 2002 paper, Reardon and Firebaugh went on to endorse the entropy index as a particularly useful measure of multi-group segregation. In order to gain a robust understanding of how segregation is impacted by the presence or absence of a court order, this analysis examines three separate measures of segregation—the exposure index, the dissimilarity index, and the entropy index. While these measures give this analysis depth, there is not enough information included here to deem school districts "hypersegregated" due to the lack of information in the dataset about the three categories of segregation measurement that incorporate spatial analysis—concentration, clustering, and centralization.

Massey and Denton define *evenness* as the "differential distribution of two groups among real units in a city" (1988, p. 283). The measure of evenness used in this analysis is the dissimilarity index, which has been one of the most consistently used measures of segregation since being introduced by Duncan and Duncan 60 years ago (1955). Despite some criticism, the endurance of the dissimilarity index seems largely because it appears to meet all of the criteria established by James and Tauber (Taylor, Gorard, & Fitz, 2000). The dissimilarity index is defined as the degree to which two groups (e.g., blacks and whites) are evenly spread throughout a given geographical area—in this case, a school district (Dixon, Singleton, & Straits, 2015). The formula for the Dissimilarity Index determining the segregation of white students from black students is stated as:

$$D=(1/2)\ SUM\ |(b_i/B-w_i/W)|$$

where b_i represents the number of black students in a given school, B represents the total number of black students in a school district, w_i represents the number of white students in a given school, and W the total number of white students across a school district.

The second segregation index used in this analysis is the exposure index. Massey and Denton noted, "[Residential] exposure refers to the degree of potential contact or the possibility of interaction, between minority and majority group members within geographic areas" (1988, p. 287). The exposure index measures the extent to which members of minority group B are exposed to majority group B, and is expressed as:

$$X=SUM\ (w_i/W)\ x\ (b_i/t_i)$$

In this measure, w_i is defined as the white population of a specific school, W is defined as the total white population of the school district, b_i is defined as the black population of a given school within the district, and t_i is defined as the total population of the given school. The exposure index indicates the likelihood of a minority student interacting with a majority-group student and is dependent on both the overall number and the distribution of minority students across a school district.

The third segregation index utilized in this analysis is the entropy index, sometimes called the information theory index. While Massey and Denton (1988) categorized the entropy index as a measure of evenness, its benefit to this analysis beyond the dissimilarity index is that the entropy index measures evenness across multiple groups rather than just across two groups such as black students and white students. Because of this, Reardon and Firebaugh (2002) referred to the entropy index as a measure of diversity, in that it measures the ratio of between-unit diversity to total diversity. Iceland (2004) defined the entropy index as:

> The weighted average deviation of each unit's entropy from the [district]-wide entropy, expressed as a fraction of the [district's] total entropy:
>
> $$H = \sum_{i=1}^{n} \frac{t_i(E - E_{i)}}{ET}$$
>
> where t_i refers to the total population of school i, T is the district population, n is the number of schools, and E_i and E represent school i's diversity (entropy) and the district's diversity, respectively. The entropy index varies between zero, when all areas have the same composition as the entire metropolitan area (i.e., maximum integration), to a high of one, when all areas contain one group only (maximum segregation). (p. 8)

Iceland then pointed out that the entropy index "measures how evenly groups are distributed across [a district's schools], regardless of the size of each of the groups" (p. 8).

Examining the Relationship between Desegregation Indices And Desegregation Status

By calculating linear regressions that examine that relationship between the various desegregation indices and the desegregation status of districts for black and white students across the years included in the panel, this chapter examines the patterns of change in the segregation levels in the different subsets of districts. This chapter examines the dissimilarity index between both white and black as well as white and Hispanic students, the black-white exposure index, the Hispanic-white exposure index, and the white-Black isolation index, the white-Hispanic isolation index, and the multi-group entropy index. The regression equations used for these models are:

Model 1: $Y_{it} = \beta X_{1it} + \alpha + u_{it} + e_{it}$
Model 2: $Y_{it} = \beta X_{1it} + \beta X_{2it} + \alpha + u_{it} + e_{it}$
Model 3: $Y_{it} = \beta X_{1it} + \beta X_{2it} + \beta X_{3it} + \alpha + u_{it} + e_{it}$
Model 4: $Y_{it} = \beta X_{1it} + \beta X_{2it} + \beta X_{3it} + \beta X_{4it} + \alpha + u_{it} + e_{it}$
Model 5: $Y_{it} = (\beta X_{1it} * \beta X_{4it}) + \beta X_{2it} + \beta X_{3it} + \alpha + u_{it} + e_{it}$

Y represents the dissimilarity index for school district *i* in year *t*, the dependent variable in all models. The standardized beta coefficients (β) for the independent variables in each stepwise model are reflected in the series of equations, where X_1 represents desegregation status, X_2 reflects poverty rate, X_3 reflects the region, and X_4 reflects the year. The symbol α represents the intercept in each equation, while u represents the between district error and e represents the within district error. Results of these models are shown in Table 3.3.

When examining the black-white dissimilarity index, the existence of a court-ordered desegregation plan at the time of the *Dowell* ruling had a statistically significant relationship to an increased white-black dissimilarity index. In the simpler models, unitary districts exhibit a larger coefficient than districts that remained under court order, but the two subsets exhibit nearly identical coefficients in the more sophisticated models (Models 3 and 4). These results are not surprising, given these districts' historical segregation levels.

In all of the black-white dissimilarity models, poverty rate is correlated with increased dissimilarity indices, with the relationship between poverty rate and dissimilarity index exceeding that of desegregation status and dissimilarity index in every model. Additionally, every region of the country but the Northeast exhibited a statistically significant, positive association with an increased dissimilarity index compared to the South region. This relationship between region and segregation as measured by the dissimilarity index was higher in the Midwest and West than in the Border region.

Table 3.3

Stepwise Regression Models Using Black-White Dissimilarity Index as the Dependent Variable

	Model 1	Model 2	Model 3	Model 4	Model 5
Never Released	0.057***	0.045***	0.072***	0.071***	
	(0.00229)	(0.00233)	(0.00238)	(0.00237)	
Unitary	0.065***	0.056***	0.072***	0.070***	
	(0.00253)	(0.00255)	(0.00257)	(0.00255)	
Poverty Rate (SAIPE)		0.067***	0.080***	0.103***	0.102***
		(0.00445)	(0.00490)	(0.00500)	(0.00500)
Border			0.064***	0.065***	0.065***
			(0.00183)	(0.00181)	(0.00181)
Northeast			-0.004	0.007	0.007
			(0.00143)	(0.00143)	(0.00143)
Midwest			0.168***	0.176***	0.176***
			(0.00134)	(0.00134)	(0.00134)
West			0.116***	0.121***	0.121***
			(0.00147)	(0.00147)	(0.00146)
Year				Individual Coefficients Suppressed	
Desegregation Status#Year					Coefficients for Individual Interactions Included in Figure 3.1
N	151070	149879	149879	149879	149879
R^2	0.007	0.012	0.040	0.054	0.055

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

In Model 5, the interaction between desegregation status and year served as the primary independent variable. The coefficients representing these interactions are included in Figure 3.1.

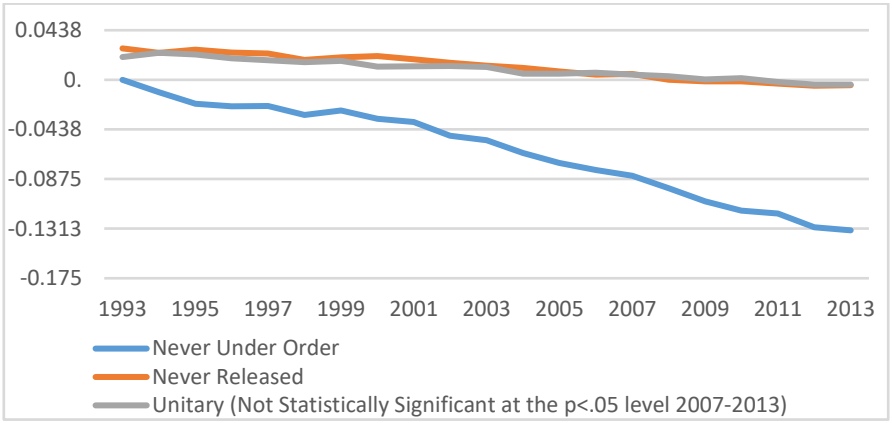

Figure 3.1. Coefficients Representing Relationship between Dissimilarity Index and the Interaction between Desegregation Status and Year

As Figure 3.1 indicates, the subset of districts not impacted by court-ordered desegregation in 1991 demonstrates a different relationship to the dissimilarity index compared to districts that continued under court order or that received unitary status from the courts. For districts not under court order, the coefficients reflecting the association with the dissimilarity were negative and grew increasingly negative between 1994 and 2013. This would indicate that segregation between whites and blacks as measured by the dissimilarity index persistently decreased. In contrast, districts that either were under court order through 2010 or declared unitary at some point exhibit a pattern that is essentially flat between 1994 and 2013. Further, this pattern is not statistically significant for unitary districts after 2007.

In addition to running regression models using the black-white dissimilarity index, the analyses of desegregation patterns also looked at the dissimilarity index between Hispanic and

white students. This model used the Hispanic-white dissimilarity index as the dependent variable. All models demonstrated overall significance at the $p<0.001$ level and are included in Table 3.4. As with the white-black dissimilarity index, the models consistently produce a positive, statistically significant association between a district remaining under court order or receiving unitary status and the level of segregation measured by the white-Hispanic dissimilarity index. The coefficients calculated for districts that remained under court order are slightly higher throughout all five models. Poverty rate also has a positive, statistically significant relationship with the white-Hispanic dissimilarity index, and the strength of this association exceeds the relationship between desegregation status and the dissimilarity index. Every region of the country except the West region has a negative association with the dissimilarity index, while the West region demonstrates a small, negative relationship with the white-Hispanic dissimilarity index. This is interesting given the concentration of Hispanic students in the West region.

Model 5 uses the interaction between desegregation status and year as the primary independent variable in the regression model. Figure 3.2 demonstrates the coefficients produced by this variable and illustrates differing segregation patterns between white and Hispanic students in the three subsets of school districts. The contrasts in these patterns are similar to those demonstrated when examining the dissimilarity levels between white and black students, with districts not under court order in 1991 demonstrating a negative relationship with the white-Hispanic dissimilarity index that grows over time. Districts under court order and unitary districts, however, demonstrate a pattern that is almost flat, with a weak, positive relationship in 1993 that very gradually tapers to a weak, negative relationship

by 2013. These patterns indicate that segregation levels between whites and Hispanics were higher in districts with court orders in place when the Supreme Court decided *Dowell*, and

Table 3.4

Stepwise Regression Models Using White-Hispanic Dissimilarity Index as the Dependent Variable

	Model 1	Model 2	Model 3	Model 4	Model 5
Never Released	0.125***	0.106***	0.111***	0.109***	
	(0.00221)	(0.00224)	(0.00231)	(0.00227)	
Unitary	0.111***	0.096***	0.097***	0.094***	
	(0.00245)	(0.00246)	(0.00249)	(0.00244)	
Poverty Rate (SAIPE)		0.108***	0.119***	0.157***	0.158***
		(0.00429)	(0.00476)	(0.00479)	(0.00479)
Border			0.079***	0.082***	0.082***
			(0.00177)	(0.00174)	(0.00174)
Northeast			0.014***	0.031***	0.031***
			(0.00139)	(0.00137)	(0.00137)
Midwest			0.067***	0.081***	0.081***
			(0.00130)	(0.00128)	(0.00128)
West			-0.048***	-0.039***	-0.039***
			(0.00143)	(0.00140)	(0.00140)
Year				Individual Coefficients suppressed	
Desegregation Status#Year					Individual Coefficients Included in Figure 3.2
N	151043	149863	149863	149863	149863
R^2	0.027	0.038	0.051	0.090	0.090

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

that segregation persisted even while segregation between white and Hispanic student decreased. This relationship persists even when controlling for poverty level and region.

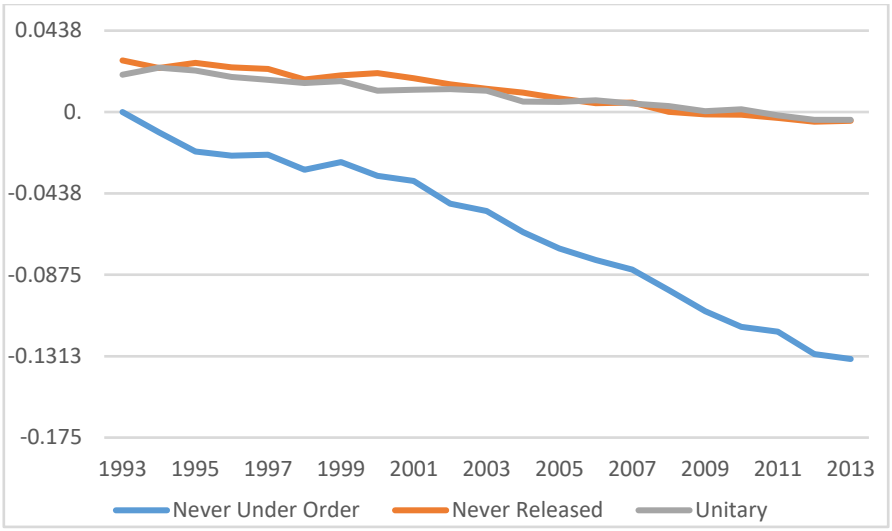

Figure 3.2. Coefficients Representing Relationship between White-Hispanic Dissimilarity Index and the Interaction between Desegregation Status and Year

Exposure Index

To examine patterns related to districts' black-white exposure index, the five regression models employed in this chapter were fitted using the black-white exposure index as the dependent variable, and the independent variables described for each model. Each of these models focusing on the exposure index were statistically significant at the $p<0.01$ level and the results are included in Table 3.5.

In each of the models using black-white exposure index as the dependent variable, there is a negative, statistically significant relationship between the presence of a court-ordered desegregation plan in 1991 and the exposure index. Because lower exposure index values indicate higher levels of segregation, these values indicate a link between the presence of a court order at the time of the *Dowell* ruling and higher desegregation levels. While the

simpler models indicate that unitary status has a greater impact on segregation than districts under court order, the difference between the two subsets of districts becomes negligible when additional variables are added into the more complex models. When poverty rate is introduced into the regression models, it has a significant, substantially negative impact on the exposure rates. Each of the regions in the model have a statistically significant, positive impact on the exposure index when compared against the South region that serves as the base level for the regional variable.

Table 3.5

Stepwise Regression Models Using Black-White Exposure Rate as the Dependent Variable

	Model 1	Model 2	Model 3	Model 4	Model 5
Never Released	-0.417***	-0.289***	-0.273***	-0.268***	
	(0.000702)	(0.000635)	(0.000638)	(0.000635)	
Unitary	-0.370***	-0.288***	-0.267***	-0.265***	
	(0.000732)	(0.000646)	(0.000663)	(0.000659)	
Poverty Rate (SAIPE)		-0.449***	-0.444***	-0.462***	-0.463***
		(0.00194)	(0.00197)	(0.00201)	(0.00201)
Border Region			0.038***	0.038***	0.038***
			(0.000715)	(0.000710)	(0.000710)
Northeast Region			0.021***	0.019***	0.019***
			(0.000582)	(0.000578)	(0.000578)
Midwest Region			0.061***	0.059***	0.059***
			(0.000530)	(0.000527)	(0.000526)
West Region			0.115***	0.114***	0.114***
			(0.000534)	(0.000530)	(0.000530)
Year				Individual	
Desegregation					Individual
N	1536493	1530677	1530677	1530677	1530677
R^2	0.277	0.459	0.469	0.476	0.476

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

Model 5 examines the relationship between the interaction between desegregation status and year and the exposure index value. Figure 3.3 charts these coefficients and illustrates the different patterns exhibited by the three subsets of school districts.

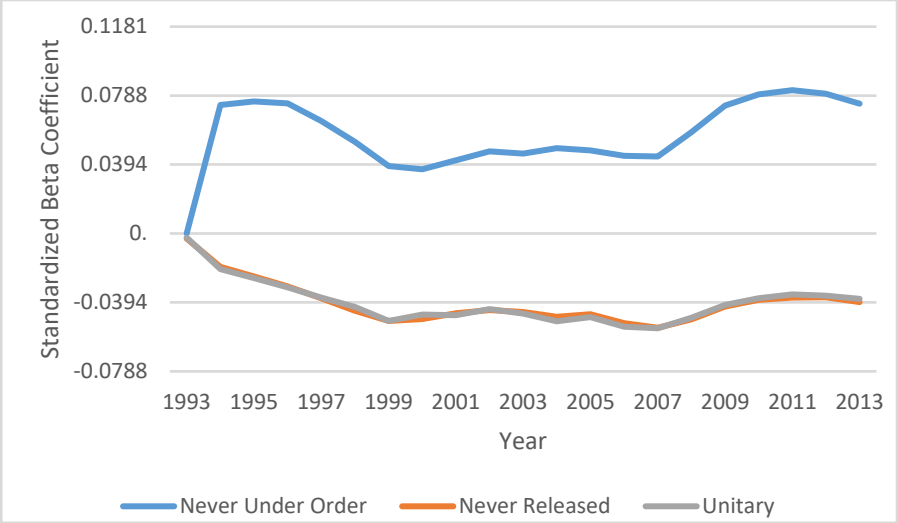

Figure 3.3. Coefficients Representing Relationship between Black-White Exposure Index and the Interaction between Desegregation Status and Year

These patterns indicate statistically significant differences between districts not under court order in 1991 and districts that were impacted by the *Dowell* ruling. Black students in school districts not under court order were more likely to see increases in exposure to black students over time, while black students in both unitary districts and districts that remained under court order were likely to experience decreasing exposure to white students between 1993 and 2013.

This analysis also examines the exposure index between Hispanic and white students across the three different subsets of school districts. The regression equations used the same independent variables and substituted Hispanic-white exposure index as the dependent variable. All five of the regression equations produced results that overall were statistically significant at the $p<.005$ level. These results are included in Table 3.6.

Table 3.6

Stepwise Regressions Using Hispanic-White Exposure Index as the Dependent Variable

	Model 1	Model 2	Model 3	Model 4	Model 5
Never Released	-0.232***	-0.098***	-0.111***	-0.110***	
	(0.000804)	(0.000746)	(0.000700)	(0.000694)	
Unitary	-0.132***	-0.046***	-0.091***	-0.090***	
	(0.000839)	(0.000758)	(0.000728)	(0.000720)	
Poverty Rate (SAIPE)		-0.472***	-0.473***	-0.475***	-0.476***
		(0.00227)	(0.00216)	(0.00219)	(0.00219)
Border Region			0.080***	0.078***	0.078***
			(0.000784)	(0.000775)	(0.000774)
Northeast Region			-0.075***	-0.077***	-0.077***
			(0.000638)	(0.000631)	(0.000630)
Midwest Region			0.027***	0.024***	0.023***
			(0.000582)	(0.000575)	(0.000574)
West Region			-0.302***	-0.301***	-0.301***
			(0.000586)	(0.000579)	(0.000578)
Year				Individual Coefficients Suppressed	
Desegregation Status#Year					Individual Coefficients included in Figure 3.4
N	1536493	1530677	1530677	1530677	1530677
R^2	0.065	0.265	0.370	0.384	0.386

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

In all of the models, there was a negative, statistically significant relationship between the subsets of districts that had a court order in place at some point and the Hispanic-white

exposure index. This indicates that Hispanic students in these districts were less likely to be exposed to white students. Poverty had a strong, negative, statistically significant relationship with the Hispanic-white exposure rate. Regional coefficients varied, with Hispanic students in the Border and Midwestern region slightly more likely to be exposed to white students compared to the South (used as the base level for regional variables), and Hispanic students in the Northeast and West less likely to be exposed to white students. Notably, the negative relationship was far stronger between the Hispanic-white exposure index in the West region and any other region of the country.

As Figure 3.4 indicates, the patterns across the three categories are more similar than with other measures of desegregation, with each subset showing an initial increase in the positive relationship with the Hispanic-white exposure rate, and then a gradual decrease and stabilization. However, the strength of the positive relationship for districts not under court order is stronger than that for the districts that remained under court order or for unitary districts, and the decrease in the middle of the 1990s is larger as well.

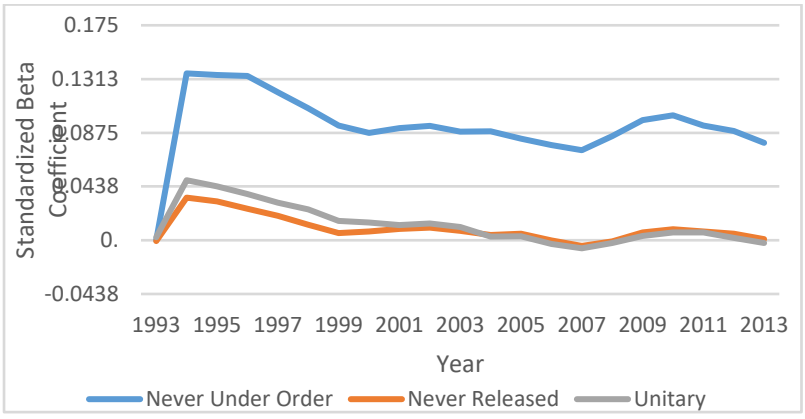

Figure 3.4. Coefficients Representing Relationship between Hispanic-White Exposure Index and the Interaction between Desegregation Status and Year

Information Theory

In addition to examining patterns, using binary desegregation measures as the dependent variable, analyses were also conducted the information theory index, a multi-group measure of segregation. Because the information theory index looks at the levels of diversity across all racial groups, it serves as perhaps the best metric to gauge the accuracy of claims that demographic changes had more to do with increases in binary segregation metrics like the dissimilarity metric than actual increases in segregation levels. A higher information theory index indicates a higher level of segregation across all racial groups in the school district. Table 3.7 includes the regression models used to examine relationships between the information theory index and desegregation status. These models demonstrated overall statistical significance at the $p<0.001$ level. In all five models, the presence of a court-ordered desegregation plans at the time of the *Dowell* ruling correlates with a higher level of segregation as measured by the information theory index. Unlike the regressions using other indices as the dependent variable, all models using the information theory index indicate slightly higher levels of segregation in districts that remain under court order compared to unitary districts. Poverty level has a strong, positive, statistically significant impact on the information theory index in all models. The Border, Midwest, and West regions all demonstrate a small, positive, statistically significant relationship with the information theory index, while the Northeast has a small, positive, statistically significant relationship with the information theory index.

Table 3.7

Stepwise Regression Models Using Information Theory Index Rate as the Dependent Variable

	Model 1	Model 2	Model 3	Model 4	Model 5
Never Released	0.192***	0.157***	0.166***	0.164***	
	(0.000805)	(0.000803)	(0.000832)	(0.000827)	
Unitary	0.172***	0.145***	0.149***	0.147***	
	(0.000889)	(0.000879)	(0.000895)	(0.000890)	
Poverty Rate (SAIPE)		0.197***	0.192***	0.217***	0.217***
		(0.00154)	(0.00172)	(0.00176)	(0.00176)
Border Region			0.045***	0.046***	0.046***
			(0.000636)	(0.000632)	(0.000632)
Northeast Region			-0.032***	-0.021***	-0.021***
			(0.000501)	(0.000500)	(0.000500)
Midwest Region			0.062***	0.071***	0.071***
			(0.000469)	(0.000468)	(0.000468)
West Region			0.028***	0.032***	0.032***
			(0.000513)	(0.000511)	(0.000511)
Year				Individual Coefficients Suppressed	
Desegregation Status#Year					Individual Coefficients Shown in Figure 3.5
N	145256	144094	144094	144094	144094
R^2	0.064	0.102	0.110	0.121	0.121

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

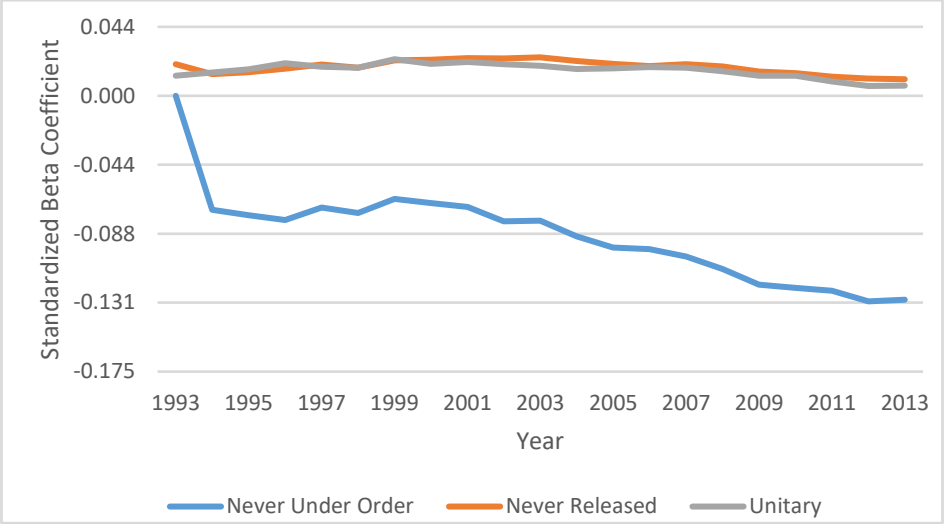

Figure 3.5. Coefficients Representing Relationship between Information Theory Index and the Interaction between Desegregation Status and Year

The Relationship between Unitary Status and Racial Composition over Time

While the analyses examining changes in desegregation measures over time establish that districts under court order at the time of the *Dowell* ruling exhibit different patterns than those not under court order, they do not provide enough information to draw conclusions about the impact of unitary status on those segregation measures. In order to analyze the impact of unitary declarations on segregation indices, the number of years that pass after the courts terminate a segregation plan needs to be considered independent of calendar year. For example, in the year 2005, both Topeka, Kansas, and Oklahoma City would be considered "unitary districts." However, Oklahoma City had already operated under unitary status for 14 years, while Topeka had been operating under unitary status for only six years. In order to account for this conceptualization of time, the analysis uses the following regression equation:

$$Y_{it} = \beta X_{1i} + \beta X_{2it} + \beta X_{3it} + \alpha + u_{it}$$

where Y represents the specific segregation measure being used as a dependent variable for *i* district *t* years after the declaration of unitary status, βX_{1i} represents the number of years that

have passed since the courts granted unitary status for *i* district, βX_{2it} represents the poverty level, βX_{3it} represents the region of the country. The symbol α represents the intercept, and u represents the error. Employing this regression model, analyses were conducted using all of the regression measures examined to contrast patterns across the subsets of districts.

Dissimilarity Index

Model 1 uses the black-white dissimilarity index and produced results that were significant at the $p<0.001$ level. The results Model 1 produced are included in both Figure 3.6 and Table 3.8.

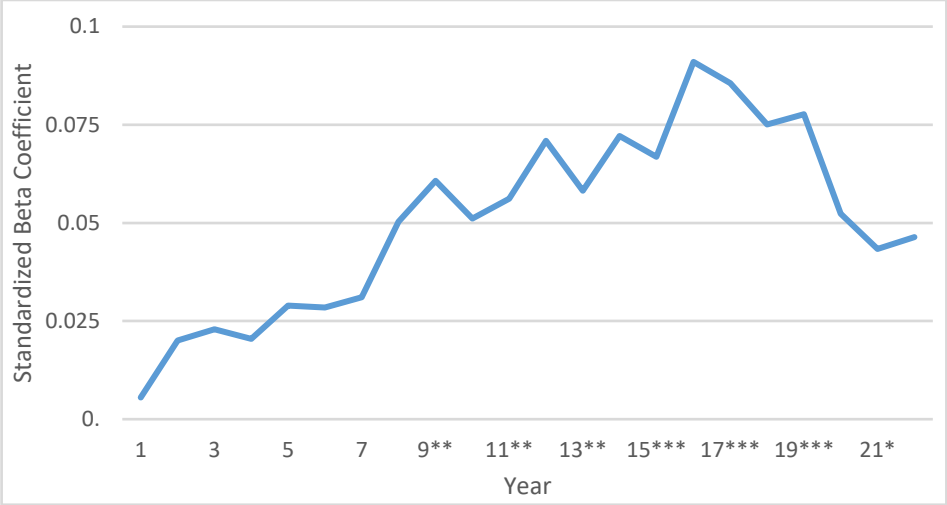

Figure 3.6. Coefficients Reflecting Relationship between White-Black Dissimilarity Index and Years Operating under Unitary Status

Table 3.8

Results of Regression Equation Examining the Relationship between the Black-White Dissimilarity Index and the Number of Years Districts Operate under Unitary Status

Variable	Model 1
0 years after release	0.000 (.)
1 years after release	0.006 (0.0171)
2 years after release	0.020 (0.0171)
3 years after release	0.023 (0.0171)
4 years after release	0.020 (0.0172)
5 years after release	0.029 (0.0174)
6 years after release	0.028 (0.0177)
7 years after release	0.031 (0.0183)
8 years after release	0.050* (0.0192)
9 years after release	0.061** (0.0202)
10 years after release	0.051* (0.0210)
11 years after release	0.056** (0.0221)
12 years after release	0.071*** (0.0241)
13 years after release	0.058** (0.0250)
14 years after release	0.072*** (0.0264)
15 years after release	0.067*** (0.0280)
16 years after release	0.091*** (0.0356)
17 years after release	0.086*** (0.0403)
18 years after release	0.075*** (0.0458)
19 years after release	0.078*** (0.0546)
20 years after release	0.052** (0.0735)
21 years after release	0.043* (0.0866)
22 years after release	0.046* (0.0967)
Poverty Rate (SAIPE)	0.034 (0.0365)
Border Region	-0.013 (0.0141)

Variable	Model 1
Northeast Region	0.016 (0.0262)
Midwest Region	0.048^{*} (0.0102)
West Region	0.138^{***} (0.0222)
N	2856
R^2	0.065

Note. Standardized beta coefficients = $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$
Standard errors in parentheses

As both Figure 3.6 and Table 3.8 indicate, the pattern demonstrated by this regression model is for the dissimilarity index to increase the longer districts operate under unitary status. This pattern differs significantly from the results produced by the regression equation using the white-black dissimilarity index as the dependent variable, but measuring the interaction between unitary status and calendar year. Specifically, this analysis considering the number of years a district operating under unitary status seems to more clearly connect unitary status to increases in the dissimilarity index, and indicates that this increase grows over the first two decades of unitary status. Some caution should be used in interpreting these results before year 8, as those individual coefficients were not statistically significant at the p<.05 level.

Model 2 analyzes the relationship between white-Hispanic dissimilarity levels and the length of time districts operate under unitary status produces similar results that are included in Figure 3.7 and Table 3.9. In this case, the dissimilarity levels between white and Hispanic students steadily increase at statistically significant levels from year 2 through year 15 before tapering somewhat during the last seven years of the model. Again, this pattern is different than the one demonstrated when considering the relationship between white-Hispanic dissimilarity and the interaction of unitary status and calendar year. This analysis also

suggests that districts are likely to see increasing segregation between white and Hispanic students the longer they operated under unitary status.

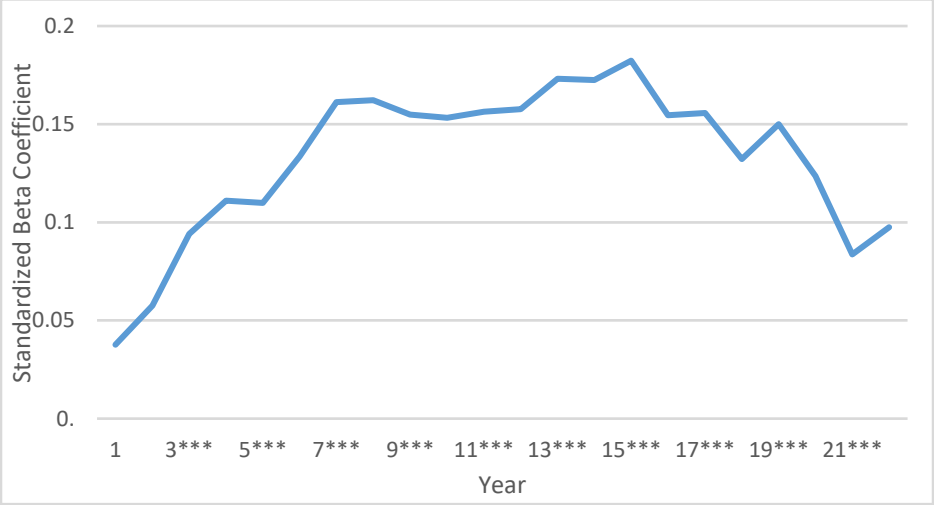

Figure 3.7. Coefficients Reflecting Relationship between White-Hispanic Dissimilarity Index and Years Operating under Unitary Status

Table 3.9

Model 2 Results of Regression Equation Using White-Hispanic Dissimilarity Level and Years Operating under Unitary Status

	Model 2
1 year after release	0.038 (0.0133)
2 years after release	0.058* (0.0134)
3 years after release	0.094*** (0.0135)
4 years after release	0.111*** (0.0136)
5 years after release	0.110*** (0.0139)
6 years after release	0.134*** (0.0142)
7 years after release	0.161*** (0.0147)
8 years after release	0.162*** (0.0155)
9 years after release	0.155*** (0.0162)
10 years after release	0.153*** (0.0170)
11 years after release	0.156*** (0.0179)

	Model 2
12 years after release	0.158*** (0.0195)
13 years after release	0.173*** (0.0204)
14 years after release	0.172*** (0.0215)
15 years after release	0.182*** (0.0228)
16 years after release	0.155*** (0.0280)
17 years after release	0.156*** (0.0317)
18 years after release	0.132*** (0.0358)
19 years after release	0.150*** (0.0425)
20 years after release	0.124*** (0.0569)
21 years after release	0.084*** (0.0671)
22 years after release	0.098*** (0.0750)
Poverty Rate (SAIPE)	0.148*** (0.0291)
Border Region	-0.057** (0.0109)
Northeast Region	0.039* (0.0202)
Midwest Region	-0.133*** (0.00811)
West Region	0.147*** (0.0171)
Observations	2854
R^2	0.209

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

Exposure Index

Model 4 examines the association between the black-white exposure index and the number of years a district operates under court order. The results of Model 4 are exhibited in Figure 3.8 and Table 3.10. In this model, the exposure rates between black and white students drop for the first 11 years of the model before rebounding to nearly their original level. This result is different from those for the regression looking at the much more stable, flat relationship between black-white exposure, unitary status, and calendar year.

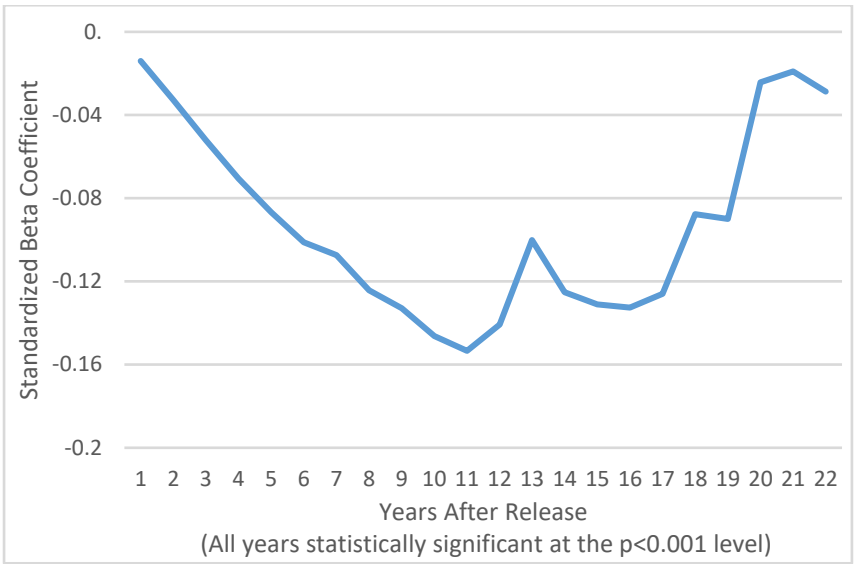

Figure 3.8. Coefficients Reflecting Relationship between Black-White Exposure Index and Years Operating under Unitary Status

Table 3.10

Results of Model 4 Regression Equation Analyzing Black-White Exposure Index and Number of Years Operation under Unitary Status

	Model 4
1 Year After Release	-0.014*** (0.00348)
2 Years After Release	-0.033*** (0.00345)
3 Years After Release	-0.052*** (0.00343)
4 Years After Release	-0.071*** (0.00344)
5 Years After Release	-0.087*** (0.00348)
6 Years After Release	-0.101*** (0.00350)
7 Years After Release	-0.107*** (0.00356)
8 Years After Release	-0.124*** (0.00365)
9 Years After Release	-0.133*** (0.00373)
10 Years After Release	-0.146*** (0.00381)
11 Years After Release	-0.153*** (0.00389)
12 Years After Release	-0.141*** (0.00401)

	Model 4
13 Years After Release	-0.100*** (0.00436)
14 Years After Release	-0.125*** (0.00451)
15 Years After Release	-0.131*** (0.00469)
16 Years After Release	-0.133*** (0.00518)
17 Years After Release	-0.126*** (0.00554)
18 Years After Release	-0.088*** (0.00640)
19 Years After Release	-0.090*** (0.00714)
20 Years After Release	-0.024*** (0.0110)
21 Years After Release	-0.019*** (0.0125)
22 Years After Release	-0.029*** (0.0141)
Poverty Rate (SAIPE)	-0.507*** (0.00818)
Border Region	-0.077*** (0.00199)
Northeast Region	0.070*** (0.00453)
Midwest Region	0.147*** (0.00199)
West Region	0.046*** (0.00234)
N	104483
R^2	0.298

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

Model 5 conducts a similar analysis using the Hispanic-White exposure rate as the dependent variable. This model produced results that were statistically significant at the p<0.001 level, and which are included in Figure 3.9 and Table 3.11.

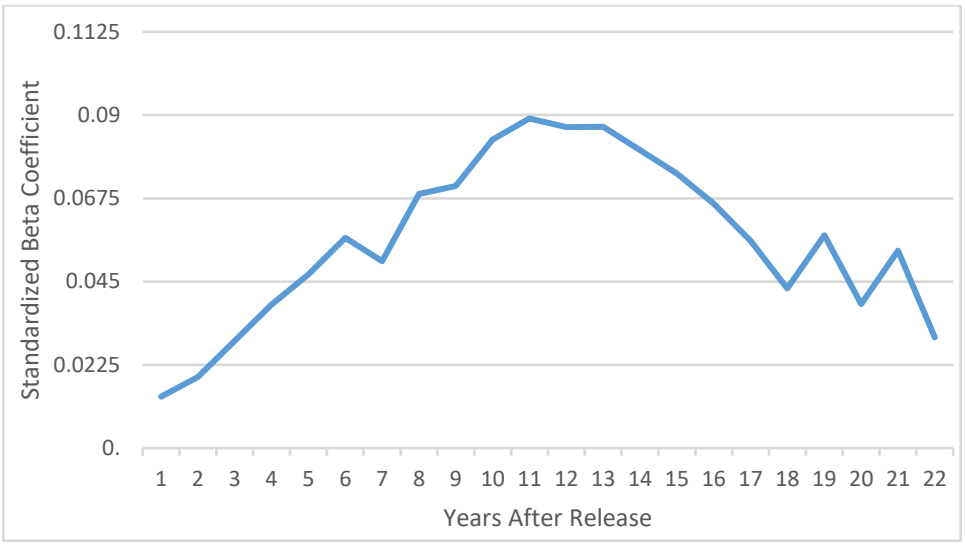

Figure 3.9. Coefficients Reflecting Relationship between Hispanic-White Exposure Index and Years Operating under Unitary Status

Model 5 produces a pattern that differs from the model considering the relationship between unitary status and calendar year on the Hispanic-white exposure index. While that model produced results that were stable and relatively flat, this model demonstrates a steady increase in the exposure of Hispanic students to white students for the first 11 years of the model, followed by a steady decline from years 11 to 18, then an erratic series of changes the final five years of the panel. Caution should be used in interpreting the results of the first four years of this model, as the individual coefficients fail to demonstrate statistical significance at the $p<.05$ level.

Table 3.11

Results of Model 5 Regression Equation Analyzing Black-White Exposure Index and Number of Years Operation under Unitary Status

	Model 5
1 Year After Release	0.014 (0.0154)
2 Years After Release	0.019 (0.0154)
3 Years After Release	0.029 (0.0156)
4 Years After Release	0.039 (0.0156)
5 Years After Release	0.047* (0.0160)
6 Years After Release	0.057* (0.0164)
7 Years After Release	0.050* (0.0170)
8 Years After Release	0.069** (0.0178)
9 Years After Release	0.071*** (0.0187)
10 Years After Release	0.083*** (0.0196)
11 Years After Release	0.089*** (0.0206)
12 Years After Release	0.087*** (0.0224)
13 Years After Release	0.087*** (0.0235)
14 Years After Release	0.081*** (0.0248)
15 Years After Release	0.074*** (0.0263)
16 Years After Release	0.066*** (0.0323)
17 Years After Release	0.056** (0.0365)
18 Years After Release	0.043* (0.0412)
19 Years After Release	0.057*** (0.0490)
20 Years After Release	0.039* (0.0656)
21 Years After Release	0.053** (0.0774)
22 Years After Release	0.030 (0.0864)
Poverty Rate (SAIPE)	0.282*** (0.0335)
Border Region	0.101*** (0.0125)
Northeast Region	0.124*** (0.0233)
Midwest Region	0.010 (0.00934)
West Region	0.344*** (0.0197)
N	2858
R^2	0.245

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

Information Theory

Model 6 is the final model that examines the relationship between a segregation measure and unitary status and focuses on the information theory index. Once again, the regression equation produces results that are statistically significant at the $p<0.001$ level, and these results are included in Figure 3.10 and Table 3.12. These results again reflect a different pattern than the one produced when unitary status interacts with calendar year. In this case, the information theory drops steadily for the first 12 years districts operate under unitary status before rebounding steadily between years 12 and 18, before demonstrating an uneven rebound in the final five years examined. Overall, the information theory level is lower after 22 years of unitary status even after the significant rebound.

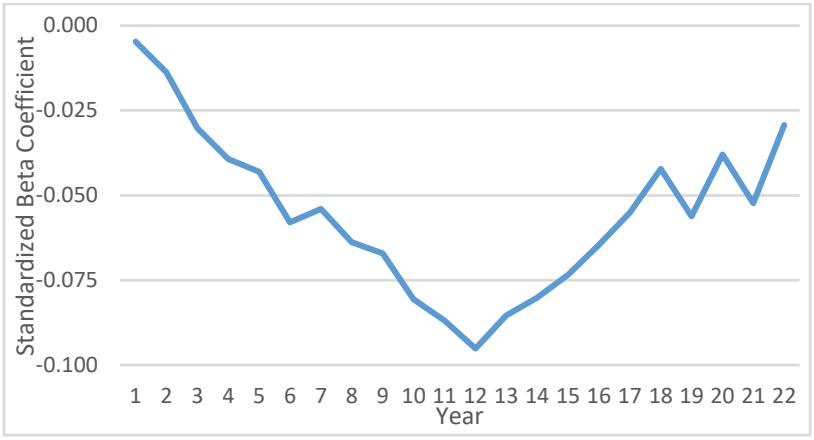

Figure 3.10. Coefficients Reflecting Relationship between Information Theory Index and Years Operating under Unitary Status

The results from this regression using a multi-group segregation index would suggest that the contrasting findings from the models examining the dissimilarity and exposure indices would seem to suggest that those differences are due to redistribution of students in majority-minority school districts over time rather than any significant evidence that

segregation decreases during the period examined. Instead, these results suggest that there is a statistically significant relationship between segregation and unitary status, indicating that overall, segregation increases the longer unitary status is in place.

Table 3.12

Results of Model 6 Regression Equation Analyzing Black-White Exposure Index and Number of Years Operation under Unitary Status

	Model 6
1 year after release	-0.005 (0.0158)
2 years after release	-0.014 (0.0159)
3 years after release	-0.030 (0.0159)
4 years after release	-0.039 (0.0160)
5 years after release	-0.043 (0.0164)
6 years after release	-0.058* (0.0168)
7 years after release	-0.054* (0.0174)
8 years after release	-0.064** (0.0183)
9 years after release	-0.067** (0.0192)
10 years after release	-0.081*** (0.0200)
11 years after release	-0.087*** (0.0211)
12 years after release	-0.095*** (0.0229)
13 years after release	-0.085*** (0.0240)
14 years after release	-0.080*** (0.0254)
15 years after release	-0.073*** (0.0269)
16 years after release	-0.065*** (0.0330)
17 years after release	-0.055** (0.0373)
18 years after release	-0.042* (0.0421)
19 years after release	-0.056** (0.0501)
20 years after release	-0.038* (0.0671)
21 years after release	-0.052** (0.0791)
22 years after release	-0.029 (0.0884)

	Model 6
Poverty Rate (SAIPE)	-0.288*** (0.0343)
Border Region	-0.095*** (0.0128)
Northeast Region	-0.118*** (0.0238)
Midwest Region	-0.004 (0.00956)
West Region	-0.335*** (0.0201)
N	2853
R^2	0.240

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

Discussion

The results of these analyses provide clear evidence to help answer the research questions framing this chapter. [1]Simple summaries of racial composition between 1993 and 2013 indicate that racial composition of school districts have changed regardless of their association with legal segregation in the past. However, the analyses in this chapter find that regardless of the desegregation metric included, every model produced statistically significant results that demonstrated that districts under court order at the time of the *Dowell* ruling had substantially different patterns of segregation from 1993 through 2013. These differences persisted in both binary and multi-group measures of segregation and affected both black and Hispanic students. While the racial composition of all districts changed regardless of their experiences with legal segregation, this does not explain the differences in segregation levels for each subset of district.

[1] In addition to the analyses conducted in this chapter, the relationship between desegregation metrics and unitary status was examined using multi-level, mixed effects regression models that incorporates a fixed effects approach examining the impact of unitary status over time and a random effects approach that captures the effects of the various regions, judicial circuits, and states where these unitary districts are located. These preliminary results validate and reinforce the findings in this chapter, and will be integrated into future research on the topic.

In addition to finding both overall changes in racial composition and differing patterns of segregation across the subsets of districts analyzed, this chapter demonstrates that there is a relationship between granting unitary status and the impact of this status and increasing segregation levels over time. These analyses validate the findings of Reardon et al., Lutz, Clotfelter, Vigdor, and Ladd and others that progress towards integration slows and ultimately reverses once court-ordered desegregation plans are terminated, and that this reversal is more than just chance or the result of the larger demographic shifts in the country's public schools. School districts argue that further integration is difficult when making the case that the courts should terminate court orders. However, the value of these court-mandated desegregation plans may lie in their ability to consolidate gains towards integration and prevent resegregation. Given the limited number of tools that districts have to voluntarily work towards integration, the value of court-ordered desegregation plans to provide a bulwark against resegregation seems to justify the courts' continuation of these plans into the near future. However, given the broader political and judicial shift away from progressive race-based enrollment policies, this objective evidence of the value of court-ordered desegregation plans may prove insufficient to protect them from future legal challenges from districts and other parties seeking to terminate these orders.

CHAPTER 4

SCHOOL FINANCE AFTER *DOWELL*

Introduction

This chapter examines the critical intersection of desegregation and school finance policy in districts implementing court-ordered desegregation plans from 1993 to 2013. Desegregation and education finance are two of the most critical areas of education policy over the past 60 years. Both the desegregation movement and education finance litigation have had an enormous impact on the collective conception of educational equity in the United States and have generated significant amounts of education research. Despite the frequent intersection of these two policy issues, little recent research has examined the impact of the end of segregation on school finance.

While the *Brown* decision noted that racially segregated schools were inherently unequal, both desegregation cases and education finance litigation has pointed to a myriad of examples where racial isolation in schools and school districts correlates with significant inequities in availability of resources. Many equity advocates saw school finance litigation in state courts as a complement to federal desegregation litigation. Indeed, as desegregation litigation first stalled and then reversed course in federal courts, equity advocates saw finance cases as the best route to obtaining judicial remedies to the consequences of racial isolation in public schools.

There is some debate about the amount or use of fiscal resources needed to close the black-white achievement gap, but researchers have largely indicated a consensus belief in the concept of vertical equity. Economists and scholars of school finance have spent a considerable amount of time attempting to determine the amount of resources necessary to

ensure that all students meet standard educational outcomes regardless of individual or school-level characteristics that may make it more difficult to meet established benchmarks. Research on the relationship between race, educational outcomes, and related resources proves to be especially important when considering post-unitary districts. Bifulco (2005), Green, Baker, and Oluwole (2008), and others have pointed to the increased costs associated with educating minority students. At the same time, many post-unitary districts find they must contend with high concentrations of students with disabilities, students who do not speak English, and students who come from impoverished backgrounds (Orfield & Lee, 2007). Each of these challenges requires not only additional efforts on the part of educators, but also additional fiscal efforts to ensure an adequate education.

A considerable number of urban school districts in the United States, including Chicago, Los Angeles, and Philadelphia, are among those that remained under court-ordered desegregation plans at the time of the *Dowell* ruling. Despite the overwhelming evidence that many such districts experienced intense racial isolation entering the 1990s, the courts declared San Diego, Little Rock, and Cleveland, among others, unitary during the same period. An examination of changes in spending patterns in post-unitary districts may help researchers and urban education advocates to better understand the fiscal impact of unitary status on these large urban systems.

Despite these connections between desegregation and school finance, scholars and policy makers have conducted little research to examine changes in district finances after the end of court-ordered desegregation. Green and Baker (2006) have examined some of the conventional wisdom about funding in Kansas City, Missouri, during the latter years of court-ordered desegregation. Additionally, the Civil Rights Project (Orfield & Lee, 2007) has noted

the growing disparities between districts serving minority students and those serving predominately white students. These studies, however, are notable exceptions to a general lack of investigation regarding school finances in districts under court order at the time of the *Dowell* ruling.

Research Questions

Due to the lack of studies that focus on a comprehensive examination of school finance data in post-unitary districts, this chapter focuses on three basic research questions. They are:

1. Do school finance data for post-unitary districts indicate any change in revenue or spending patterns during the post-*Dowell* era?
2. Do any changes in spending patterns among post-unitary districts indicate an increase or decrease of fiscal support for schools during this period?
3. Did fiscal patterns change once court granted districts unitary status?

These questions provide an initial step into a deeper exploration of the intersection of desegregation plans and school funding strategies since the *Dowell* ruling. Admittedly, the answers to these questions will not provide a complete picture of how school funding and the termination of court orders interacted in school districts still under court supervision at the time of the *Dowell* decision.

At the same time, these initial findings should be able to steer further analyses of school finance data in post-unitary districts and rule out certain hypotheses. Specifically, if overall trends indicate that post-unitary districts decreased spending after the termination of court plans, it would suggest that school districts might have cut funding as a response to being released from court-ordered funding. An increase in spending during the post-unitary

period provides impetus for researchers to ask questions about whether school districts increased funding as the result of courts declaring unitary status, and if districts leverage additional funds to respond to the termination of a court-ordered desegregation plan. Regardless of whether spending increased or decreased, any shift in spending could prompt further examinations of the potential relationship and impact of these changes in spending on student achievement in post-unitary district.

Methodology

This study uses a 21-year panel of district-level data from 1993 through school year 2013 and includes data on 481 school districts where court-ordered desegregation rulings were in effect at the time of the Supreme Court's *Dowell* decision. A detailed description of the dataset is available in Chapter 1.

Fiscal data used in these analyses were obtained from the NCES Common Core of Data F-33 Local Education Agency Finance Surveys from 1990 through 2005 (National Center for Education Statistics, 2016) and from the *Rutgers Graduate School of Education/Education Law Center: School Funding Fairness Data System* (Baker, Srikanth, & Weber, 2016). When absolute expenditures or revenues are discussed, these figures were adjusted for inflation using the Consumer Wage Index (CWI). In the National Center for Education Statistics Guide regarding the use of CWIs, Taylor and Glander (2006) note:

> The Comparable Wage Index (CWI) is a measure of the systematic, regional variations in the salaries of college graduates who are not educators. It can be used by researchers to adjust district-level finance data at different levels in order to make better comparisons across geographic areas. (p. 1)

The CWI accounts for both regional differences in costs as well as inflation over time. Where district to labor market comparisons are made, the labor markets used are those defined by the CWI index.

To analyze differences across the three subsets of school districts included in this dissertation, a series of multiple regressions was conducted to contrast the results produced by the different districts. The specification for this multiple regression is:

$$Y_{it} = \alpha+(\theta DESEG_{it} * YEAR_i) + \beta POVERTY_{it} + \gamma RELSPEND_{it} + \psi REGION_{it} +\alpha+\upsilon_{it}+\varepsilon_{it}$$

Y represents the respective fiscal variable being analyzed (either overall spending, administrative spending, or revenue generated from local sources) for district *i* in year *t*. The fiscal variable is the dependent variable in all of these initial models. The independent variables include *DESEG* which represents the district desegregation status in a given period and *YEAR* represents the calendar year for that period. *POVERTY* captures the poverty rate, and *RELSPEND* reflects the district to labor market spending ratio, and *REGION* reflects region of the country. υ represents the between district error and ε represents the standard error. All calculations for these regressions comparing subsets of districts are reported using standardized coefficients and also report standard errors.

To further analyze the association between a declaration of unitary status and its potential association with the fiscal variables being analyzed in this chapter, several of the analyses employ a fixed-effects regression model. Employing this approach controls allows for examination of several time-varying predictors, and also controls for time-invariant characteristics of unitary districts that might introduce bias into the equations (Greene 2002;

Dranove, 2012;). The equations for these fixed-effects models include only independent variables that are time-sensitive, and are specified as:

$$Y_{it} = \alpha + \theta POSTORD_{it} + \beta POVERTY_{it} + \gamma RELSPEND_{it} + \upsilon_{it} + \varepsilon_{\iota\tau}$$

In this fixed-effects equation, *Y* is the respective fiscal variable being analyzed (either overall spending, administrative spending, or revenue generated from local sources). *POSTORD* refers to the number of year a district has operated under unitary status; *POVERTY* captures the poverty rate for that district in that year of unitary status; and *RELSPEND* is a vector of the relative spending between district *i* and the average spending for that district's respective labor market. Individual fixed effects are represented by υ and therefore control for all time-insensitive characteristics and ε is the standard error term[2]. All 215 unitary districts were included in these models, with each district featuring a different number of observations based on how many years it operated under unitary status. Altogether, the fixed effects models in this chapter include 2,868 observations. All calculations are reported as standardized coefficients, and they also report standard errors.

Findings

Per-Pupil Spending

Figure 4.1 illustrates the mean per-pupil expenditure for each of the subsets of districts between 1993 and 2013. The graph shows that school districts not under court supervision at the time of the *Dowell* ruling had a higher mean per-pupil expenditure in 1993 and maintained

[2] Fixed-effects regressions were calculated in STATA, which creates dummy variables for all observations with one omitted, and also dummy variables for each of the years operating under unitary status (1-22). STATA then uses these dummy variables to calculate the fixed effects regression. (Torres-Reyna, 2007).

a higher per-pupil expenditure than either districts that remained under court order or unitary districts in each year of the dataset.

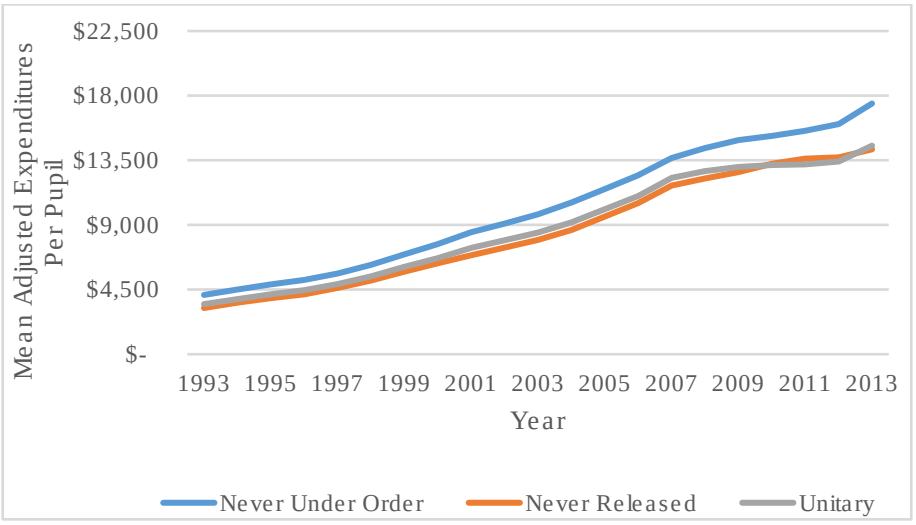

Figure 4.1. Mean Expenditures per Pupil, 1993-2013

To account for differences in education costs across various regions of the country, Figure 4.2 captures the ratio of a district's spending compared to the spending for the district's entire labor market. Figure 4.2 shows that both districts consistently under court order and unitary districts spent slightly more compared to their labor markets, while districts not under court order spent just under the average for their labor markets. Between 1993 and 2013, districts consistently under court-ordered desegregation on average spent 1 to 3% more than the average for their labor markets. Both the actual spending figures as well as the evidence of relatives spending seems to largely contradict the public narrative that desegregation districts spent markedly higher amounts of money compared to surrounding districts not under court order (Ciotti, 1998; Evers & Clopton, 2006).

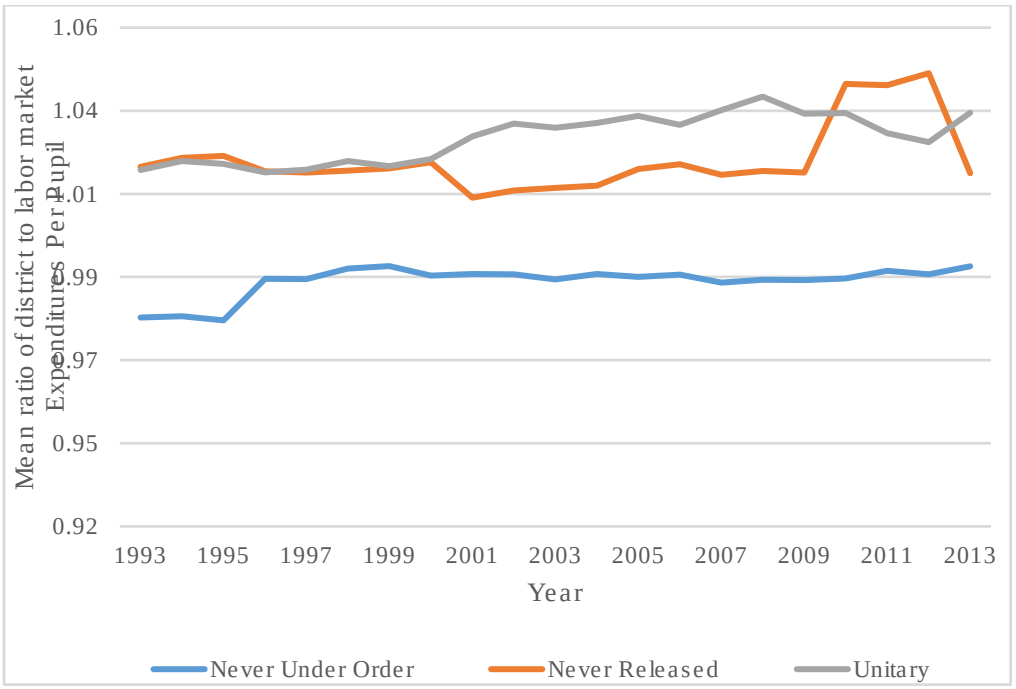

Figure 4.2. Ratios of District to Labor Market Spending, 1993-2013

Further evidence that contradicts the perception that districts under court-ordered supervision spend significantly more per pupil is also evidenced when analyzing spending by districts once they are released from court order. Table 4.1 shows the ratio of district to labor market spending for districts after the courts terminate districts' desegregation plans. The ratio never drops, and indeed shows an increase in some years, notable after 15 years of release from court oversight. These data suggests that court-ordered desegregation plans do not seem to be driving spending up in these districts.

Table 4.1

Ratio of District to Labor Market Spending after Declaration of Unitary Status

Years after court declared unitary status	Ratio of district to labor market spending
0	1.03
1	1.03
2	1.03
3	1.03
4	1.03
5	1.03
6	1.04
7	1.03
8	1.04
9	1.04
10	1.04
11	1.05
12	1.05
13	1.04
14	1.04
15	1.03
16	1.07
17	1.05
18	1.07
19	1.10
20	1.17
21	1.23
22	1.29

Districts under a court order also seem to see a rise in relative spending from 2009 through 2012, years when the American Recovery and Reinvestment Act (ARRA) provided

school districts funding for both operating and capital expenditures in the hopes of offsetting the consequences of the Great Recession. Further analysis of the relationship between desegregation status and ARRA funding follows later in this chapter.

Regression Results

While these descriptive statistics provide some insight into the spending patterns of different subsets of school districts included in the dataset, further analysis is required to determine if these patterns are statistically significant. To examine this statistical significance, I fitted various models that treated per-pupil expenditures as the dependent variable, the desegregation status as the independent variable, and a variety of explanatory variables. Table 4.2 reports the standardized beta coefficients and standard errors from these regression models.

Model 1 shows that districts never released from court order and unitary districts have statistically significant, negative relationships with per-pupil spending compared to districts not under court order. Model 2 adds the poverty level of each district into the equation. Poverty level demonstrates a negative, statistically significant relationship with spending, and the inclusion of poverty level in the regression equation blunts the negative impact of desegregation status on spending to a small extent. Model 3 adds the ratio of district to labor market spending into the regression. Relative spending has a strong, positive, statistically significant relationship with per-pupil spending. In all three of these models, the overall explanation of variance represented by the r-squared value is small.

Model 4 adds another explanatory variable to the equation by fitting the various regions of the country into the equation as a dummy variable, and using the Southern region as the base. Given that per-pupil expenditures have already been adjusted using the CWI,

these regional differences reflect variations beyond labor costs across different geographic areas. The strength of this association is not statistically significant for the Border region, statistically significant but small for the Midwestern and Western regions, and significant and substantial for the Northeastern region. Additionally, introducing regional variance "flips" the association between desegregation status and spending from negative to positive and weakens the statistical significance of these associations. Model 4 also explains much more of the variance in per-pupil spending than the previous models, with an r-squared value that jumps to .248.

Table 4.2

Stepwise Regression Models on Per Pupil Spending, Models 1 through 6

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Never Released	-0.046*** (90.93)	-0.027*** (84.03)	-0.035*** (80.28)	0.001 (76.35)	0.010*** (46.19)	
Unitary	-0.034*** (100.8)	-0.017*** (92.39)	-0.030*** (88.33)	0.006** (82.56)	0.013*** (49.94)	
Desegregation Status # Year						Individual Coefficients Included in Figure 4.4
Poverty Rate (SAIPE)		-0.113*** (161.6)	-0.153*** (155.7)	-0.011*** (159.5)	-0.138*** (99.18)	-0.138*** (99.12)
Ratio of District to Labor Market Spending			0.297*** (109.4)	0.255*** (101.0)	0.273*** (61.11)	0.273*** (61.05)
Border Region				0.007* (58.82)	-0.003* (35.59)	-0.003* (35.55)
Northeastern Region				0.460*** (46.02)	0.404*** (27.94)	0.404*** (27.92)
Midwestern Region				0.104*** (43.04)	0.056*** (26.11)	0.056*** (26.09)
Western Region				0.064*** (47.21)	0.039*** (28.58)	0.039*** (28.55)

Year					Individual Coefficients included in Figure 4.4	
N	152481	151403	151403	151403	151403	151403
R^2	0.003	0.015	0.102	0.248	0.725	0.725

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

The final two models add time as a variable to the regression equation. Model 5 adds calendar year to the model as a categorical variable. The regression results show a strong, statistically significant relationship between spending and time that increases over time, illustrated in Figure 4.3. There are also slight increases in the associations between regions and spending. Finally, adding time into the model increases the negative association between

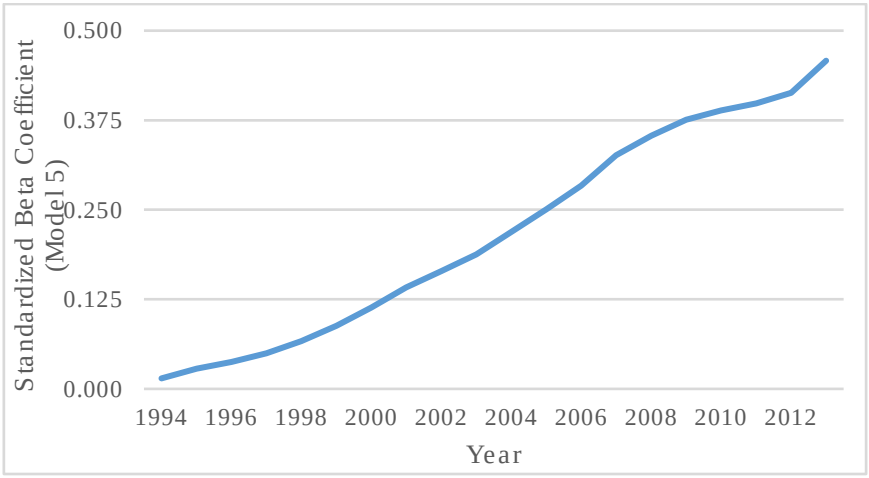

Figure 4.3. Coefficients for Individual Years from Regression Model 5

poverty rate and spending. Overall, this model predicts .703 of the variance in spending. The coefficients for each individual year of the model are documented in Figure 4.4.

Model 6 takes a somewhat different approach to the inclusion of time in the regression equation by looking at the interaction of desegregation status and each individual year in the panel. These results are illustrated in Figure 4.4.

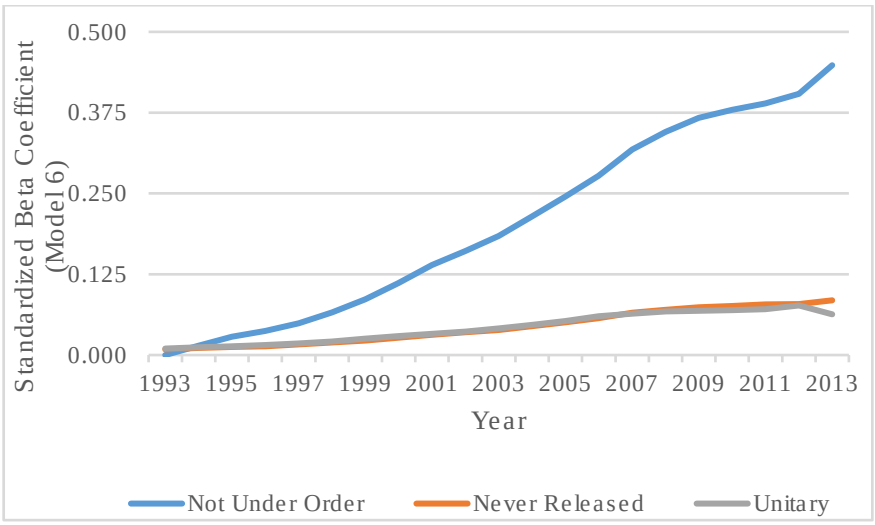

Figure 4.4. Coefficients for Interactions between Desegregation Status and Year

By looking at these interactions rather than time as a single continuous variable for the entire dataset, we see that the relationship between spending and time varies significantly between districts that are not under court order and districts that had a desegregation order in place at the time of the *Dowell* ruling. The strength of the association between an individual year and spending increases much more significantly over time for districts not under court order compared to districts that were under court oversight in 1991. For districts with no court order, the coefficients for each individual year correspond with the increases predicted when time is used as a continuous variable.

However, both subsets of districts that did have a court order in place in 1990 saw a very different pattern, with much smaller increases in the coefficients from year to year and years where the coefficients remain flat or even demonstrate small declines. These differing

patterns become most evident in the final year of the dataset, where districts not under court order report a standardized beta coefficient of .448, while districts never released from court

order report a coefficient of .085, and unitary districts report a coefficient of .063. These findings indicate that districts operating under court-ordered desegregation plans at the time of the Supreme Court's ruling in the *Dowell* case experienced much more muted increases in per pupil spending compared to districts not impacted by the court order.

The results of Model 7, which is the Model using the fixed-effects regression described in the methodology section, are included in Table 4.3. These results demonstrate that release from court order has a slightly negative relationship with per-pupil spending. These relationships are statistically significant 15 of the 22 years reported in Model 7. Table 4.3 and Figure 4.5 present the results of Model 7.

Table 4.3

Results of Regression for Model 7

Independent Variable	Standardized beta coefficient (per pupil expenditure)	*Standard Error*
1 year after release	0.039***	(22.01)
2 years after release	0.076***	(34.41)
3 years after release	0.110***	(45.63)
4 years after release	0.142***	(58.27)
5 years after release	0.170***	(73.52)
6 years after release	0.191***	(83.33)
7 years after release	0.214***	(291.5)
8 years after release	0.229***	(305.0)
9 years after release	0.243***	(22.01)
10 years after release	0.255***	(34.41)
11 years after release	0.268***	(45.63)
12 years after release	0.252***	(58.27)
13 years after release	0.255***	(73.52)

Independent Variable	Standardized beta coefficient (per pupil expenditure)	*Standard Error*
14 years after release	0.244***	(83.33)
15 years after release	0.247***	(89.72)
16 years after release	0.215***	(94.17)
17 years after release	0.205***	(108.8)
18 years after release	0.180***	(120.5)
19 years after release	0.153***	(137.2)
20 years after release	0.109***	(143.0)
21 years after release	0.092***	(158.6)
22 years after release	0.090***	(182.5)
Poverty Level (SAIPE)	-0.238***	(216.7)
Relative Spending (District to Labor Market)	0.487***	(255.1)
N	2868	
R-Squared	0.778	

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

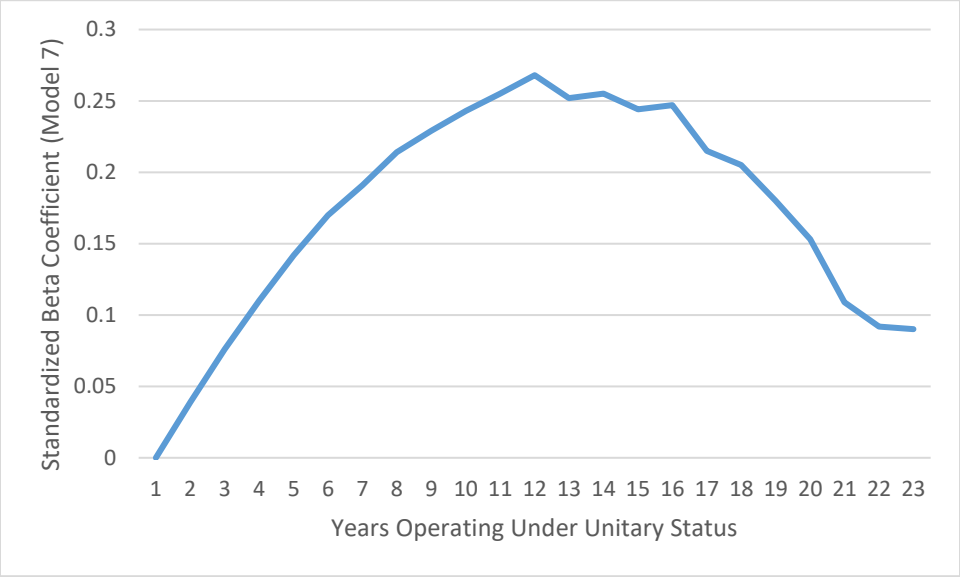

Figure 4.5. Model 7 Examining Relationship between Expenditures per Pupil and Time Elapsed from Termination of Desegregation Order

While the strength of this association is relatively insignificant compared to the other coefficients in the model, this finding provides statistically significant evidence that unitary districts had distinctly different spending patterns than either districts that were not under court order at the time of the *Dowell* ruling or districts that were never released from court order between 1993 and 2013.

Administrative Spending

In addition to overall per-pupil spending, this chapter also examined the relationship between administrative spending and desegregation status. Examining this association is important because plaintiffs often cite burdensome administrative costs associated with a district's compliance with a court-ordered desegregation plans when suing for unitary status (Orfield & Thronson, 1993; Ryan, 1999). Interestingly, school districts themselves do not support pursuing unitary status, and complain that the cost exceeds potential savings from reduced compliance (Cowen Institute, 2010; Ryan, 1999). By examining the relationship

between general administrative spending and desegregation status, this analysis seeks to validate these claims.

To examine the statistical relationship between administrative spending and desegregation status, I constructed a series of regression models that used percentage of spending focused on administration as the dependent variable and desegregation status as the independent variable. Table 4.4reports the standardized beta coefficients and standard errors from these regression models.

The regressions in Models 1 through 5 showed that both districts under court order and unitary districts have a statistically significant, negative relationship with administrative spending when controlling for the other variables in the model. The negative relationships are relatively consistent across all models, and suggest that districts not under court order are likely to have higher general administrative costs than districts under court order.

Model 6 seems to indicate that the continued presence of a court order may increase general administrative spending over time. This model looked at the interaction between desegregation status and calendar year and the association of this interaction with changes in administrative spending. While districts that were not under court order and unitary districts showed slight, gradual increases in the standardized beta coefficients for these regressions over the 21-year panel, districts never released from court order saw more significant increases from 1997 through 2013, resulting in a coefficient that suggests a much greater increase in general administrative spending compared to the other two subsets of school districts. These results are displayed in Figure 4.6.

Table 4.4

Relationship between General Administrative Spending and Desegregation Status

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	General Administrative Spending Per Pupil (Standard Error)					
Active#Year						See Figure 4.6
Never Released	-0.041*** (2.020)	-0.043*** (1.989)	-0.049*** (1.919)	-0.024*** (1.845)	-0.021*** (1.736)	
Unitary	-0.051*** (2.240)	-0.052*** (2.187)	-0.063*** (2.111)	-0.044*** (1.996)	-0.041*** (1.878)	
SAIPE Poverty Rate		0.005 (3.822)	-0.030*** (3.717)	0.110*** (3.852)	0.059*** (3.661)	0.060*** (3.721)
Relative Spending			0.266*** (2.594)	0.224*** (2.421)	0.230*** (2.278)	0.230*** (2.275)
South Region				0.000 (.)	0.000 (.)	0.000 (.)
Border Region				0.085*** (1.422)	0.080*** (1.338)	0.081*** (1.335)
Northeast Region				0.352*** (1.112)	0.329*** (1.047)	0.330*** (1.048)
Midwest Region				0.192*** (1.040)	0.173*** (0.979)	0.173*** (0.980)
West Region				-0.124*** (1.140)	-0.135*** (1.073)	-0.134*** (1.071)
Calendar Year					0.305*** (0.052)	
R^2 Value	0.004	0.004	0.074	0.206	0.298	0.3

Note. Standardized beta coefficients = * p<0.05 ** p<0.01 *** p<0.001
Standard errors in parentheses

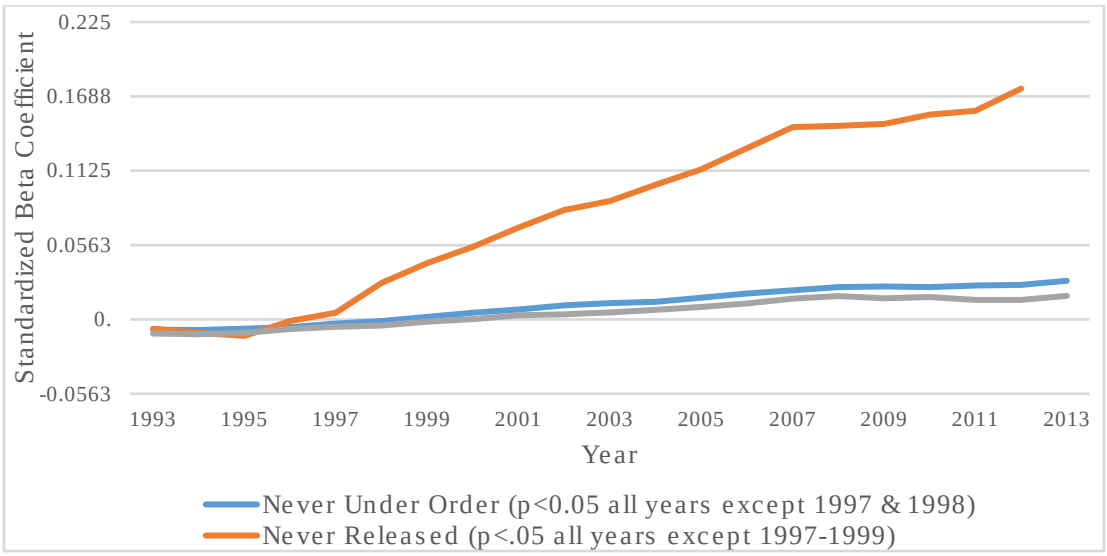

Figure 4.6. Regression Results Examining General Administrative Spending, Desegregation Status, and Year

Given the specific focus on administrative spending associated with compliance, and plaintiffs' arguments that terminating a court order would reduce these costs, I constructed a model that looks specifically at administrative spending in unitary districts. This model, Model 7, is a fixed-effects multiple regression. Model 7 indicates that unitary districts never realize a savings in general administrative spending after the courts terminate their desegregation plans. Instead, districts see a surge in general administrative spending for the first decade after desegregation plans end, and then gradually retreating, though to a level that is still nominally above the initial level of administrative spending at the time courts declared districts unitary. Table 4.5 and Figure 4.7 display the results of this regression model.

Table 4.5

Results of Regression Examining Administrative Spending and Elapsed Time from Unitary Declaration

Independent Variable	Standardized Beta Coefficient	Standard Error
1 year after release	0.019**	(2.526)
2 years after release	0.027***	(3.024)
3 years after release	0.055***	(4.248)
4 years after release	0.057***	(4.070)
5 years after release	0.063***	(4.531)
6 years after release	0.094***	(6.006)
7 years after release	0.093***	(5.491)
8 years after release	0.106***	(5.974)
9 years after release	0.119***	(8.117)
10 years after release	0.130***	(10.53)
11 years after release	0.117***	(9.811)
12 years after release	0.115***	(12.43)
13 years after release	0.107***	(10.73)
14 years after release	0.103***	(11.75)
15 years after release	0.106***	(16.29)
16 years after release	0.080***	(12.02)
17 years after release	0.082***	(14.75)
18 years after release	0.074***	(19.00)
19 years after release	0.063***	(18.78)
20 years after release	0.054***	(28.28)
21 years after release	0.033**	(32.59)
22 Years After Release	0.033***	(25.64)
Poverty Level (SAIPE)	-0.078	(58.23)
Relative Spending (District to Labor Market)	0.274***	(47.67)
N	2868	
R^2	0.204	

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses

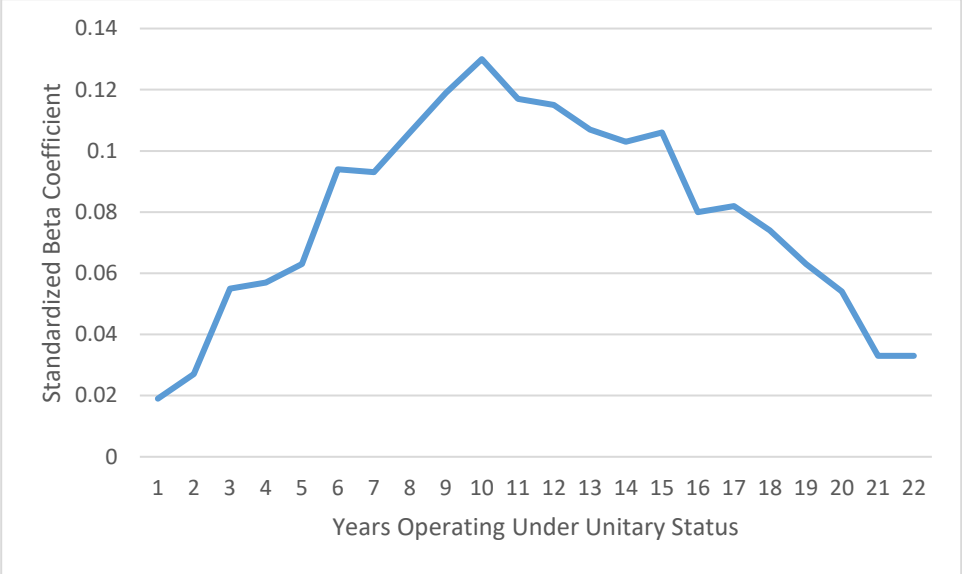

Figure 4.7. Change in Standardized Beta Coefficient Reflecting Relationship between General Administrative Spending and Years after Declaration of Unitary Status

These findings contradict plaintiffs' arguments that ending court-ordered desegregation plans would lower administrative costs for school districts. Administrative costs rise in statistically significant ways for both districts that remain under court order and unitary districts.

Local Tax Effort

While an examination of expenditure data has produced findings that help answer the research questions related to the fiscal patterns, some examination of revenue generation is needed to explore changes in fiscal support for districts after the courts release districts from desegregation plans. Again, we use regression equations like the other analysis in this chapter, this time using the percentage of revenue derived from local sources as the dependent variable. In the regression equations examining districts' fiscal commitments, the percent of revenue generated from local sources serves as the dependent variable as a proxy for a community's fiscal commitment to its schools. The regression models use desegregation

status as the sole, categorical independent variable in Model 1, and then adds the same explanatory variables as our other regression models (poverty rate, relative revenue generation, region, time, and the interaction of desegregation status and calendar year) in Models 2 through 6. Table 4.6 and Figure 4.8 display the results of the regression models and the interaction between desegregation status and calendar year.

Table 4.6

Results of Regression Models Examining Percentage of Revenue Generated from Local Sources

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Pct. of revenue generated from local sources (standardized beta coefficient)					
Desegregation Status#Year						See Fig. 4.8
Never Released	-0.083*** (0.276)	0.020*** (0.234)	0.015*** (0.224)	0.009*** (0.225)	0.009*** (0.224)	
Unitary	-0.061*** (0.306)	0.018*** (0.257)	0.008*** (0.247)	0.010*** (0.243)	0.010*** (0.242)	
SAIPE Poverty Rate		-0.566*** (0.450)	-0.597*** (0.435)	-0.545*** (0.469)	-0.554*** (0.473)	-0.581*** (0.475)
Relative Spending			0.237*** (0.303)	0.210*** (0.295)	0.211*** (0.294)	0.213*** (0.290)
South Region				0.000 (.)	0.000 (.)	0.000 (.)
Border Region				-0.051*** (0.173)	-0.051*** (0.173)	-0.052*** (0.170)
Northeast Region				0.164*** (0.135)	0.160*** (0.135)	0.148*** (0.134)
Midwest Region				-0.051*** (0.127)	-0.054*** (0.126)	-0.066*** (0.125)
West Region				-0.076*** (0.139)	-0.078*** (0.139)	-0.081*** (0.137)
Not under Order (Base Level)					0.052*** (0.00670)	

N	152863	151643	151643	151643	151643	151643
R^2 Value	0.010	0.314	0.369	0.415	0.417	0.434

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

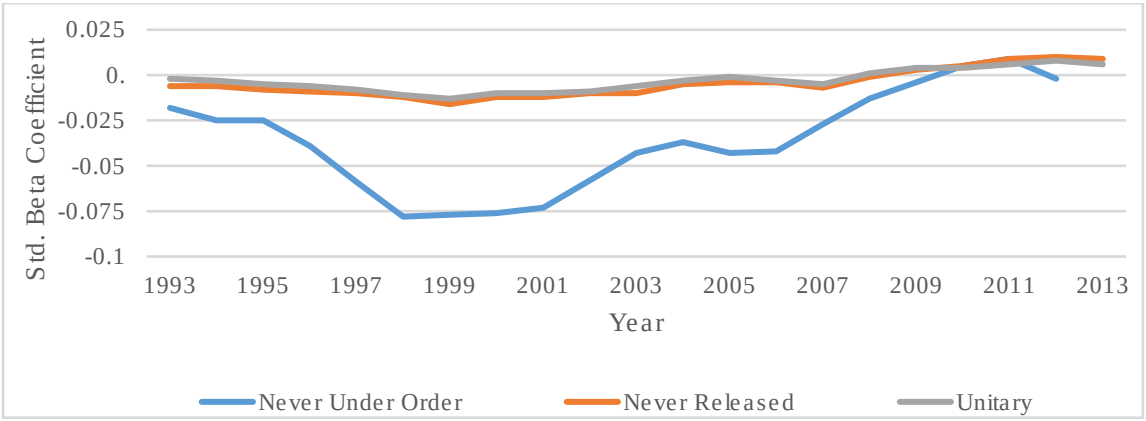

Figure 4.8. Interaction of Percentage of Revenue from Local Sources, Desegregation Status, and Time

The overall trends in Model 6 show minimal fluctuation in the association between desegregation status and the revenue generated from local sources for both districts under court order and unitary districts. However, districts not under court order show more fluctuation, with a significant dip throughout the 1990s, and then a mostly steady climb in the association from 2000 through 2012. For example, districts not under court order see the coefficient representing the relationship between desegregation status and local funding drop from -.018 in 1994 to -.077 in 2000, reflecting a substantial decline in these districts' reliance on local funding during this period. Over the same period, districts never released from court order show minimal change from -.006 in 1994 to -.012 in 2000, reflecting a steady reliance on local funding. Unitary districts move from -.003 in 1994 to -.01 in 2000, also reflecting essentially a steady reliance on local funding. This flat trend for districts with court order in place at the time of the *Dowell* ruling continues for the remainder of the panel, while districts

not under court order see the coefficients climb throughout the 2000s and cross back into positive territory in 2011. These regressions seem to suggest that neither a court-ordered desegregation plan nor a declaration of unitary status seems to be correlated with significant shifts in local revenue generation.

I also conducted a fixed-effect, multiple regression analysis focusing specifically on the relationship between the percentage of revenue derived from local sources and the length of time that unitary districts had been released from their court-ordered desegregation plans (Model 7). The equation for Model 7 is describe in the methodology section of this chapter, and the results are presented in Table 4.7 and Figure 4.9.

Table 4.7

Regression Model Examining Relationship between Percentage of Local Revenue and Years of Release from Court Order

	Model 1	
	Pct. revenue from local sources	Standard Error
1 Year After Release	0.004	(0.254)
2 Years After Release	0.011	(0.312)
3 Years After Release	0.017**	(0.311)
4 Years After Release	0.012	(0.414)
5 Years After Release	0.034***	(0.421)
6 Years After Release	0.042***	(0.444)
7 Years After Release	0.045***	(0.533)
8 Years After Release	0.032***	(0.582)
9 Years After Release	0.040***	(0.607)
10 Years After Release	0.039***	(0.680)
11 Years After Release	0.030**	(0.840)
12 Years After Release	-0.002	(0.995)
13 Years After Release	-0.009	(1.120)
14 Years After Release	-0.010	(1.262)

	Model 1	
	Pct. revenue from local sources	Standard Error
15 Years After Release	-0.008	(1.509)
16 Years After Release	0.017	(1.260)
17 Years After Release	0.013	(1.357)
18 Years After Release	0.009	(1.403)
19 Years After Release	0.011	(1.924)
20 Years After Release	0.016**	(1.512)
21 Years After Release	0.013***	(1.323)
22 Years After Release	0.012*	(1.764)
Poverty Rate (SAIPE)	-0.153***	(5.723)
Relative Revenue	0.047	(3.267)
N	2868	
R^2	0.078	

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Standard errors in parentheses

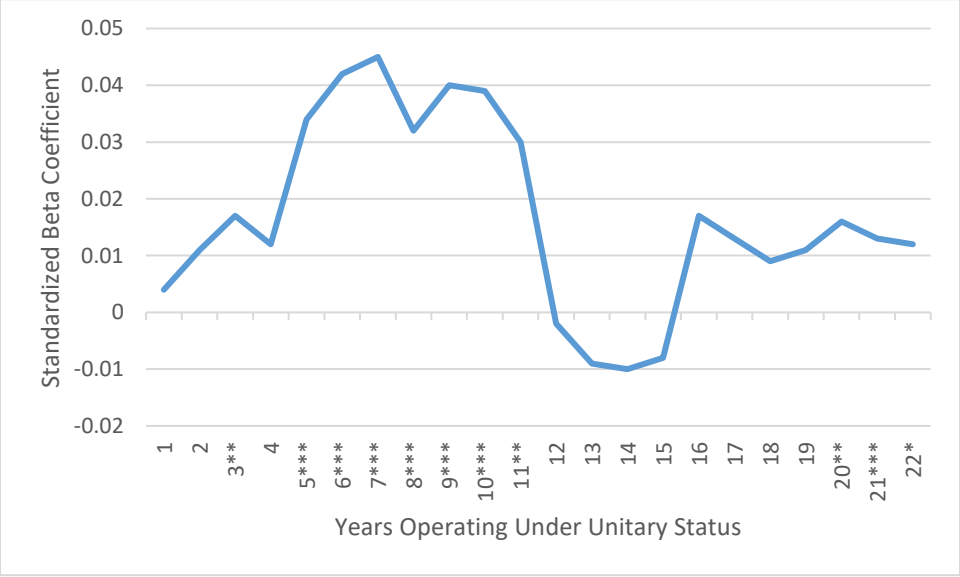

Figure 4.9. Change in Standardized Beta Coefficient Reflecting Relationship between Percentage of Revenue from Local Sources Years after Declaration of Unitary Status

While this analysis had somewhat limited value because several individual years did not produce statistically significant results, there is a clear pattern demonstrated from the fifth year after the termination of a court order through the 12th year after termination of a court order. During this period, unitary districts demonstrate a statistically significant, positive correlation between the release from court order and the percentage of their revenue generated locally when controlling for other variables including poverty level, relative revenue generation, the region of the country, and the calendar year. This pattern suggests that unitary districts shouldered more of the burden for funding schools locally after courts terminated desegregation plans. This finding is also notable considering the 1990 *Missouri v Jenkins* ruling. In that case, the Supreme Court ruled that courts could set local tax rates to fund efforts to end desegregation. While desegregation opponents often found this to be one of the most onerous burdens of mandatory desegregation plans, it appears that districts increased the share of revenue generated locally after decisions about taxation rates returned entirely to local control.

ARRA Funds

As the overall trends for expenditures and revenues indicate, the gap between districts not under court order at the time of the *Dowell* ruling and districts that were under court order were magnified from 2008 and beyond. This shift is likely to due to the impact of both the Great Recession of 2008 as well as the federal funds invested in education through the American Recovery and Reinvestment Act (ARRA). The previous analyses demonstrate how the gaps in relative revenue generation and spending shifted after the Great Recession, but these changes in relative revenue generated may be masking other trends related to the recession.

The National Center for Education Statistics finance data include three specific variables related to ARRA funding for fiscal years 2009 through 2012. These three variables note that amount of Title I revenue a district received through ARRA, the amount of overall expenditures funded by ARRA, and the amount of capital outlay funded by ARRA. Figure 4.10 summarizes the ARRA investments in the various categories of districts in 2009 through 2012.

The ARRA descriptive data indicate that there was a lag in ARRA funding, with districts not under court order receiving more significant amounts of funding during FY2009. The rate of funding for all categories of districts increased substantially in 2010 and 2011. Districts under court order exhibited overall expenditures 6% higher than districts not under court order, and with capital outlay expenditures 17% higher than districts not under court order. The federal government allocated nearly twice as much Title I ARRA revenue to

	No Court Order				Court Order				Unitary			
Year	Freq.	Mean ARRA Expenditures	Mean ARRA Capital Outlay Expenditures	Mean ARRA Title I Revenue	Freq.	Mean ARRA Expenditures	Mean ARRA Capital Outlay Expenditures	Mean ARRA Title I Revenue	Freq.	Mean ARRA Expenditures	Mean ARRA Capital Outlay Expenditures	Mean ARRA Title I Revenue
2009	6,700	$ 108	$1	$3	267	$40	$1	$2	215	$40	$2	$6
2010	6,693	$ 339	$ 21	$46	268	$ 396	$44	$105	215	$439	$35	$120
2011	6,672	$342	$ 21	$46	268	$ 401	$45	$ 106	215	$ 443	$ 35	$ 121
2012	6,654	$76	$ 7	$ 12	267	$ 102	$ 17	$ 29	215	$ 111	$ 22	$ 48

Figure 4.10. Summary of ARRA Investments, 2009 through 2012

districts under court order compared to districts not under court order, with the relative level dropping somewhat in 2012. Unitary districts had higher comparable levels of ARRA

revenues; spending 17% more total ARRA than districts not under court order, and with twice the amount of capital outlay expenditures. Unitary districts received approximately 225% of the Title I ARRA funding that districts not under court order received.

To test the statistical significance of the relationship between ARRA funding and a district's desegregation status, I conducted a linear regression like those conducted for the other analyses. The regressions used the three ARRA variables (overall expenditures, capital outlay expenditures, and Title I ARRA revenue) as the dependent variable, desegregation status and calendar year as an interaction as the independent variable, and poverty level, relative spending, and region of the country as explanatory variables. The equation for these regression models is:

$$Y_{it} = \alpha + (\theta DESEG_{it} * YEAR_i) + \beta POVERTY_{it} + \gamma RELSPEND_{it} + \psi REGION_{it} + \alpha + \upsilon_{it} + \varepsilon_{it}$$

In each of these equations, *Y* represents the dependent variable, which is the respective ARRA funding variable (Overall Expenditures, Capital Expenditures, or Title I revenue). The independent variables include *DESEG* which represents the district desegregation status in a given period and *YEAR* represents the calendar year for that period. *POVERTY* captures the poverty rate, and *RELSPEND* reflects the district to labor market spending ratio, and *REGION* reflects region of the country. υ represents the between district error and ε represents the standard error. These findings suggest that the variance in average ARRA funding that indicates increased funding for districts under desegregation is due to other factors. Given the relatively low r-squared values for these models, other variables not included in these models may be better predictors of ARRA funding.

Table 4.8

Regression Model Examining ARRA Funding and Desegregation Status

	Total ARRA Expenditures		ARRA Capital Outlay Expenditures		ARRA Title I Revenue	
Not under Court Order#2009	(.)		(.)		(.)	
Not under Court Order#2010	0.387 (3.502)	***	0.141 (1.018)	***	0.236 (1.103)	***
Not under Court Order#2011	0.390 (3.507)	***	0.141 (1.020)	***	0.235 (1.104)	***
Not under Court Order#2012	-0.062 (3.510)	***	0.399 (1.021)	***	0.41 (1.105)	***
Never Released# 2009	-.035 (12.78)	***	-0.023 (3.717)	***	-0.031 (4.025)	***
Never Released# 2010	0.099 (12.81)	***	-0.025 (3.725)	***	0.102 (4.033)	***
Never Released# 2011	0.099 (12.82)	***	0.025 (3.727)	***	0.101 (4.035)	***
Never Released# 2012	-0.019 (12.84)	***	0.000 (3.733)		0.000 (4.042)	
Unitary#2009	-0.033 (14.10)	***	-0.017 (4.101)	**	-0.022 (4.440)	***
Unitary#2010	0.104 (14.11)	***	0.028 (4.103)	***	0.111 (4.442)	***
Unitary#2011	0.105 (14.11)	***	0.028 (4.103)	***	0.111 (4.443)	***
Unitary#2012	-0.011 (14.14)	*	0.09 (4.112)		0.024 (4.452)	***
Poverty Rate (SAIPE)	0.265 (13.57)	***	0.107 (3.947)	***	0.344 (4.273)	***
Relative Expenditures Per Pupil	0.031 (8.391)	***	0.023 (2.440)	***	0.098 (2.641)	***
South Region	0.000 (.)		0.000 (.)		0.000 (.)	
Border Region	0.089 (5.135)	***	-0.038 (1.493)	***	0.035 (1.617)	***

	Total ARRA Expenditures		ARRA Capital Outlay Expenditures		ARRA Title I Revenue	
Northeast Region	0.153	***	-0.084	***	0.047	***
	(4.092)		(1.190)		(1.288)	
Midwest Region	0.122	***	-0.080	***	0.000	
	(3.729)		(1.084)		(1.174)	
West Region	0.012		-0.114	***	0.047	***
	(4.123)		(1.199)		(1.298)	
N	28419		28419		28419	
R^2	0.334		0.051		0.241	

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

When looking at all the finance data from 2008 through 2013 together, they indicate that the gap in relative spending between districts without a desegregation order in 1990 and those with an order that year grew despite significant ARRA investments in desegregation districts. This suggests that these districts were more fiscally fragile and needed substantial support from the federal government just to prevent significant fiscal shortfalls. The data also indicate that the increased rates of local revenue may have been directed towards filling budget gaps from declining state revenues rather than being a concerted local effort to increase the amount of overall funding for desegregation districts.

Discussion

The analysis in this chapter helps provide answers to the research questions focused on the intersection of desegregation and school finance:

1. Do school finance data for post-unitary districts indicate any change in revenue or spending patterns during the post-*Dowell* era?
2. Do any changes in spending patterns among post-unitary districts indicate an increase or decrease of fiscal support for schools during this period?

3. Did fiscal patterns change once court granted districts unitary status?

The findings in this chapter suggest that there were differing patterns for both revenues and expenditures for the three categories of districts included in the analysis. Between 1993 and 2013, districts not impacted by the *Dowell* ruling were more likely than either districts that remained under court order or unitary districts to see increases in per-pupil spending over the years at a statistically significant level. ARRA funding between 2009 and 2012 prevented further growth of the expenditure gap between schools not impacted by the *Dowell* ruling and school districts with court orders in place in 1990. The analysis also indicates a statistically significant difference in the level of administrative spending across the three categories of districts. Districts under court order spent more per pupil on general administrative spending than unitary districts and districts never under court order, and the amount that unitary districts spent on administrative costs did decline over time after the courts terminated desegregation orders. One possibility for further research is a closer examination of the link between administrative costs specifically associated with desegregation plans and the differing patterns in administrative spending between unitary districts and those that remained under court order.

In addition to differences about expenditures, the analyses in this chapter also found differing patterns related to revenue generation. Specifically, the analysis of local revenue generation showed that both districts that remained under court order and unitary districts generated consistent levels of revenue locally over the 21-year period examined, while districts not impact by the *Dowell* ruling saw statistically significant decreases in the share of revenue made up of locally generated funds throughout the later 1990s and into the 2000s, before rebounding to early 1990s levels after the Great Recession. Additionally, regression

analysis indicates that both unitary districts and districts that remained under court order were more likely to receive ARRA Title I funds from 2008 through 2012.

Concerning unitary districts, there is evidence that fiscal patterns did change once the courts granted districts unitary status. For each of the fiscal variables studied, there was an initial change in the years immediately after courts terminated desegregation orders. Per-pupil expenditures begin increasing one year after unitary status is granted, and continue to increase through year 6, then level off for a few years, before peaking with a .216 beta coefficient compared to per-pupil expenditures the year courts terminated the segregation order. General administrative spending declines, with statistically significant declines from 5 years after courts grant unitary status through 15 years after unitary status. For proportion of revenue generated through local sources, there were growing increases that were statistically significant five years after districts enter unitary status. Increases continue through year 10, where they peak at a .08 beta coefficient higher than the year unitary status began.

These initial shifts begin to recede the longer districts operate under unitary status. Per-pupil spending begins to fall after 11 years under unitary status, ending the period studied with a .048 beta coefficient after 22 years in unitary status compared to the base level established the year courts granted unitary status. Cuts to administrative spending also peak and recede, topping out in year 15 at -0.111 below the level of administrative spending in the year the courts terminated desegregation orders, and then rising again to -0.43 level 22 years after unitary status was granted. The share of revenue derived from local sources follow a similar pattern, with the increase in local revenue declining after peaking at 11 years under unitary status and then dropping off through year 15, with evidence of a more modest rebound in the final years.

These fiscal patterns in unitary districts that occur after the courts terminate desegregation cases seem to indicate a pattern of increased fiscal support for unitary districts over the first decade of unitary operations, and then a gradual retreat to levels of fiscal support like the levels exhibited at the time unitary status was granted. While these shifts in fiscal patterns for unitary districts take a decade or more to manifest, it does appear that increased fiscal support for districts after they are granted unitary status is not sustained.

For equity advocates, these findings raise two concerns. First, since districts impacted by the *Dowell* ruling tend to serve more students of color and have higher poverty rates, the lower levels of expenditures indicate difficulty in achieving vertical equity in these districts. Second, the ARRA funding may have masked a growing funding gap between districts not under court order and districts that did have a court order in place in 1991. Further analysis of these measures in years to come will be important to further understand the impact of ARRA resources on these funding gaps.

Given the evidence from this examination of spending patterns in districts that remain under court order, it is not surprising that these districts struggled to make substantial progress towards closing racial achievement gaps or attracting more diverse constituents to their school districts. In the absence of resources needed to ensure a satisfactory education for all students, desegregation orders served as an essentially unfunded mandate that may have prevented policies that would accelerate desegregation, but lacked the tangible assets needed to proactively implement new strategies or initiatives that would accelerate integration and racial equity.

Funding patterns in unitary districts indicate that there are initial efforts to increase spending, cut administrative spending, and increase local efforts to generate education

funding, but that each of these patterns fades over time. This may indicate that while there is an initial focus on using fiscal resources to shape the post-unitary education funding, this effort is not sustained over time. These drops in student spending in unitary districts come despite evidence that these districts cut administrative spending and increase the proportion of revenue generated from local sources over the same period after release. These findings seem to indicate that unitary districts have fewer resources to work with after being released from court oversight, and that any efforts to redirect spending or generate additional local revenue are not likely to offset the overall drop in student spending after release from court order. This reduction in resources may complicate efforts to maintain and improve outcomes for all students and maintain equitable opportunities for students regardless of race in the aftermath of a unitary declaration.

CHAPTER 5

ANALYSIS OF EDUCATIONAL ATTAINMENT

Any analysis examining the impact of the *Dowell* decision and subsequent terminations of court-ordered desegregation plans must include some analysis of educational attainment for minority students in districts that had histories of de jure segregation. In these communities, educational attainment had been one of the key social and economic gatekeepers that stood in the way of promoting racial equity. At the same time, minority groups across the nation have seen educational attainment as a primary vehicle for economic mobility and social integration. Rury and Hill (2015) pointed out that a concerted effort on the part of black students, families, educators, and civil rights leaders significantly closed the graduation gap between Black and White students from 1940 to 1980.

From an economic standpoint, education attainment has become even more important in the 21st century. In 1973, 72% of the workforce found employment with a high school degree or less, including nearly a third of workers that had not completed high school (Symonds, Schwartz, & Ferguson, 2011). By 2007, only 1 in 10 workers were able to find employment without a high school degree (Symonds et al., 2011). Further, the majority of American jobs now require at least some postsecondary education—education that is not obtainable without first attaining a high school diploma (Symonds, et al., 2011).

Given the importance of high school graduation as a milestone for economic security, this analysis focuses on the following research questions:

1. How did educational attainment vary between schools not under court order, schools that were under court order, and schools that courts declared unitary between 1993 and 2013?

2. Did patterns in education attainment change after courts declared districts unitary?

Methodology

This study used a 20-year panel of school level data from 13,389 high schools from 1993 through school year 2013, and included data on high schools located in the 480 school districts where court-ordered desegregation rulings were in effect at the time of the Supreme Court's *Dowell* decision. A full description of the dataset is available in Chapter 1.

While postsecondary attainment has become increasingly important for economic security and equality, the high school diplomas is still the critical milestone for educational attainment. High school graduation rates have received considerable national attention over the past decade, but unfortunately, there is no data source that consistently reports the number of graduates from each high school in the U.S. for the period between the *Dowell* decision and the adoption of the Adjusted Cohort Graduation (ACGR) rate by the U.S. Department of Education in 2008. However, a metric referred to as "promoting power" serves as a proxy for measuring education attainment prior to the adoption of the ACGR. DePaoli, Balfanz, and Bridgeland (2016) provide the following definition of promoting power in the *Building a Grad Nation* report from the America's Promise Alliance:

> Promoting Power is an estimated graduation rate developed by the Everyone Graduates Center at Johns Hopkins University School of Education. It compares the number of twelfth-grade students in a school to the number of ninth-graders three years earlier by using the grade level enrollment numbers reported to the federal Common Core of Data. Promoting Power does not account for students who make it to twelfth grade but ultimately do not graduate, nor does it adjust for transfers in or out. In the absence of uniform, school-level graduation rates, Promoting Power enables up-to-date comparisons to be made across states and schools (DePaoli et al., 2016, p. 89)

For example, if a school has promoting power of 90% or more, it means that the number of 12th-graders is at least 90% of the number of 9th-graders four years earlier. If a

school has promoting power of 60% or less, it means that the number of 12th-graders is 60% or less of the number of 9th-graders four years earlier (Balfanz & Legters, 2005).

Data drawn from the U.S. Department of Education's Common Core of Data can be used to calculate historic levels of promoting power. This makes promoting power a feasible proxy for educational attainment. Balfanz and Legters (2005), however, note two main limitations with using promoting power to estimate graduation rates. First, promoting power does not take into account students who make it to the 12th grade but do not graduate, creating the potential to overestimate graduation rates based on promoting power if a large number of 12th graders do not complete their diplomas. Second, promoting power can underestimate graduation rates for high schools in communities that have high rates of net out migration because of demographic shifts, school changes, or losses of major employers. Through 2005, analysis of available migration data, however, shows that no more than 5% of high schools are likely to be affected by high rates of net out migration between 9th and 12th grade (Balfanz & Legters, 2005). Schools with promoting power greater than 100% are schools in which transfers into the school exceed transfers out and nearly all freshmen are being promoted to 12th grade in the standard number of years, or when two or more schools are consolidated into one after the first year of high school for the cohort being analyzed. Schools reporting promoting power rates of greater than 120% were tagged in the analysis and excluded from some calculations.

In addition to measuring schools' promoting power as part of this analysis, this chapter also focuses on a subset of schools with especially low promoting power. These schools, labeled "dropout factories" by Balfanz and Legters (2004), have promoting power rates of 60% or lower. As Balfanz and Legters noted, "High schools with weak promoting

power are overwhelmingly majority minority. A majority minority high school is five times more likely to have weak promoting power than a majority white school" (2004, p. 5). Because previous studies have established a strong link between racial composition and promoting power, examining the relationship between a district's legal desegregation status and whether or not its high schools were dropout factories seems relevant to the research questions and larger themes of this analysis.

To analyze differences across the three subsets of school districts included in this dissertation, a series of regressions was conducted to contrast the results produced by the different districts. The specification for this multiple regression is:

$$Y_{it} = \alpha + (\theta DESEG_{it} * YEAR_i) + \beta POVERTY_{it} + \gamma LOCALE_{it} + \psi REGION_{it} + \upsilon_{it} + \varepsilon_{it}$$

Y represents promoting power for high school *i* in year *t*, and is the dependent variable in these models. The independent variables include *DESEG* which represents the district desegregation status in each period and *YEAR* represents the calendar year for that period. *POVERTY* captures the poverty rate, and *LOCALE* reflects the NCES locale code, and *REGION* reflects region of the country. υ represents the between district error and ε represents the standard error. All calculations for these regressions comparing subsets of districts are reported using standardized coefficients and also report standard errors.

To further analyze the association between a declaration of unitary status and its potential association with the fiscal variables being analyzed in this chapter, several of the analyses employ a fixed-effects regression model. Employing this approach controls allows for examination of several time-varying predictors, and also controls for time-invariant characteristics of unitary districts that might introduce bias into the equations (Greene 2002;

Dranove, 2012;). The equations for these fixed-effects models include only independent variables that are time-sensitive, and are specified as:

$$Y_{it} = \alpha + \theta POSTORD_{it} + \beta POVERTY_{it} + \upsilon_{it} + \varepsilon_{it\tau}$$

In this fixed-effects equation, *Y* is the respective fiscal variable being analyzed (either overall spending, administrative spending, or revenue generated from local sources). *POSTORD* refers to the number of year a district has operated under unitary status and *POVERTY* captures the poverty rate for that district in that year of unitary status. Individual fixed effects are represented by υ and therefore control for all time-insensitive characteristics and ε is the standard error term[3]. All 1,185 high schools from the 215 unitary districts were included in these models, with each district featuring a different number of observations based on how many years it operated under unitary status. Altogether, the fixed effects models in this chapter include 15,913 observations. All calculations are reported as standardized coefficients, and they also report standard errors.

Findings

First, the analysis reports descriptive statistics for the three subcategories of schools examined in this study. The three subcategories are:

- high schools located in districts that were not under court-ordered desegregation plans at the time of the *Dowell* ruling;

[3] Fixed-effects regressions were calculated in STATA, which creates dummy variables for all observations with one omitted, and also dummy variables for each of the years operating under unitary status (1-22). STATA then uses these dummy variables to calculate the fixed effects regression. (Torres-Reyna, 2007).

- high schools that were located in districts that were under court-supervised desegregation plans at the time of the *Dowell* ruling and continued under court supervision through 2010; and
- high schools located in districts that the courts had granted unitary status by 2010.

Table 5.1 includes the number of high schools for each year of the panel, as well as the mean and median promoting power for each subcategory. Schools with a promoting power greater than 120% were excluded from the calculations, as these results are typically the result of opening or closing school campus. The descriptive statistics indicate that schools not impacted by the *Dowell* agreement have a higher promoting power in both 1993 and 2013. The gap between districts not under court order and the other two categories closes somewhat between 1993 and 2013.

Table 5.1

Descriptive Statistics, Promoting Power by Desegregation Status, 1993 and 2013

	1993			2013		
	n	Mean Promoting Power	Median Promoting Power	n	Mean Promoting Power	Median Promoting Power
Not Under Order	8,377	0.81	0.841	10,325	0.828	0.863
Never Released	1,023	0.643	0.659	1,624	0.711	0.737
Unitary	893	0.652	0.675	1,185	0.714	0.747

Figure 5.1 graphs the trend of mean promoting power over time for each of the subsets of districts included in the dataset. These trends indicate that all three categories of districts saw declines in promoting power throughout the 1990s and then a gradual rebound throughout the 2000s and 2010s. While the overall patterns are similar, districts impacted by the *Dowell*

had much lower initial levels of mean promoting power and experienced sharper declines in graduation rates in the 1990s. Further, the promoting power gap between districts without a court order in 1991 and districts affected by the *Dowell* ruling do not substantially close over the 21-year period studied here.

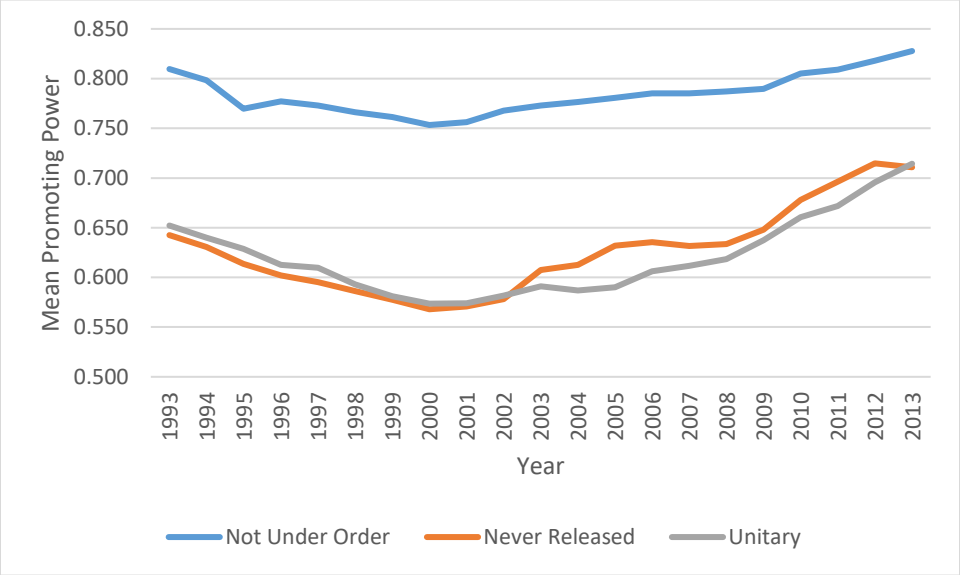

Figure 5.1. Mean Promoting Power Rates, 1993-2013

While these patterns in the descriptive statistics provide some evidence of differing patterns of educational attainment, further analysis is needed to determine if these trends are statistically significant. To determine the significance of the results and further explore the relationship between promoting power and desegregation status, I constructed a series of regressions using the specifications described in the methodology section of this chapter. Table 4.4 reports the standardized beta coefficients and standard errors from these regression models.

Table 5.2

Regression Results, Promoting Power and Desegregation Status, Models 1-6

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Never Released	-0.203***	-0.106***	-0.081***	-0.061***	-0.056***	
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	
Unitary	-0.206***	-0.146***	-0.116***	-0.065***	-0.063***	
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	
Desegregation Status#Year						Individual Coefficients Included in Figure 5.2
Poverty Rate		-0.330***	-0.318***	-0.252***	-0.305***	-0.306***
		(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Mid-Size City			0.004	0.047***	0.040***	0.041***
			(0.002)	(0.002)	(0.002)	(0.002)
Urban Fringe, Large City			0.101***	0.149***	0.129***	0.130***
			(0.002)	(0.002)	(0.002)	(0.002)
Urban Fringe, Mid-Size City			0.077***	0.114***	0.101***	0.101***
			(0.002)	(0.002)	(0.002)	(0.002)
Large Town			0.024***	0.036***	0.034***	0.035***
			(0.004)	(0.004)	(0.004)	(0.004)
Small Town			0.136***	0.184***	0.181***	0.182***
			(0.002)	(0.002)	(0.002)	(0.002)
Rural			0.180***	0.254***	0.246***	0.247***
			(0.002)	(0.002)	(0.002)	(0.002)
Border Region				0.057***	0.055***	0.055***
				(0.002)	(0.002)	(0.002)
Northeast Region				0.207***	0.196***	0.194***
				(0.001)	(0.001)	(0.001)
Midwest Region				0.174***	0.163***	0.162***
				(0.001)	(0.001)	(0.001)
West Region				0.092***	0.085***	0.084***
				(0.001)	(0.001)	(0.00130)
Year					Individual Coefficients Suppressed	
N	260337	259378	258463	239367	239367	239367
R^2	0.075	0.172	0.191	0.225	0.253	0.255

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

The results show that in each of the models, both of the subsets of districts impacted by the *Dowell* decision are statistically linked to lower levels of promoting power. This negative correlation weakens as additional explanatory variables are introduced into the regression equations. Poverty rate is included in Models 2 through 6 and demonstrates a

negative, statistically significant association with promoting power that is more negative than the association with desegregation status. When locale is introduced to the regression equation in Models 3 through 6, the equations use large cities (defined by the National Center of Education Statistics as a central city of the metropolitan area with a population of at least 250,000) as the base, and the coefficients for locales show that they are positively associated with promoting power compared to large cities. Likewise, when the region variable is introduced, the South region is used as a base level, and other regions of the country demonstrate a positive, statistically significant relationship with promoting power when compared to the South.

When looking at the trend produced by the coefficients describing the interaction between desegregation status and year, we see a pattern somewhat similar to the patterns produced by the descriptive statistics. However, the decline in promoting power in the 1990s is more pronounced for districts not under court order than the two categories impacted by the *Dowell* decision. This steeper decline is more than offset by the end of the period with a steady increase in the association between the absence of a court order in 1991 and improved promoting power. While the coefficients produced here are all small (with a range between --0.07 and 0.04), they are still notable given the significant impact that failure to graduate from high school has on individuals, and how even a small dip in graduation rates could trigger significant consequences for schools and districts.

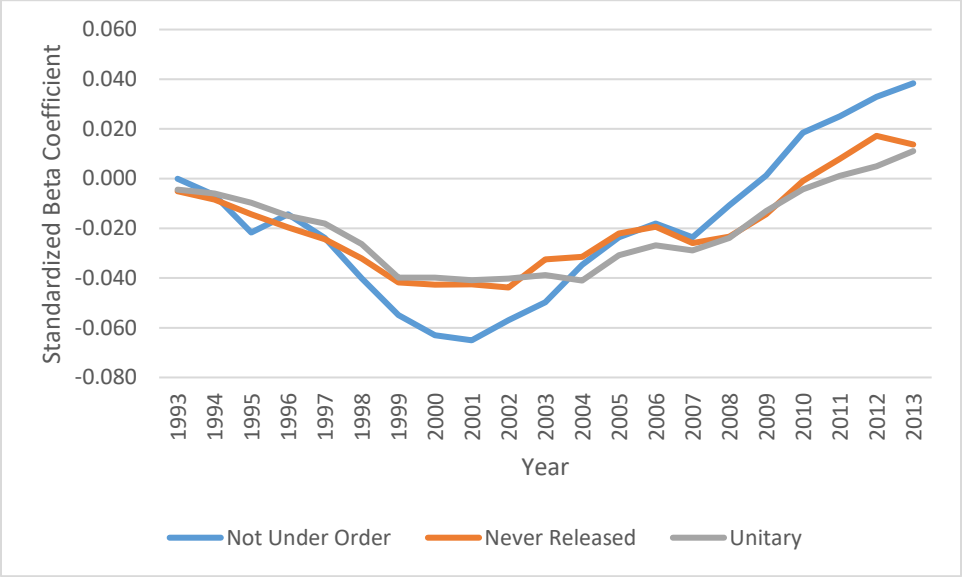

Figure 5.2. Standardized Beta Coefficients Representing Interaction between Desegregation Status and Year (All coefficients significant at the $p<0.001$ level)

These findings indicate that there are somewhat differing patterns in changes in median promoting power over the period examined, but they do not explicitly determine how promoting power may shift after the courts declare a district unitary. In the analyses above, shifts in promoting power were plotted against calendar year regardless of when a district was declared unitary. Therefore, the results of promoting power in the year 2000 for unitary schools could include a district such as Oklahoma City that had already been released from court order nine years earlier in 1991, and a district such as Topeka, Kansas, that had its court order terminated just one year earlier in 1999.

I also conducted fixed-effects, multiple regression analysis focusing specifically on the relationship between the percentage of revenue derived from local sources and the length of time that unitary districts had been released from their court-ordered desegregation plans (Model 7). The equation for Model uses the specifications for the fixed-effects methods

described in the methodology section. The results of Model 7 are shown in Table 5.3, and coefficients reflecting each year after unitary status is represented in Figure 5.3.

Table 5.3

Results of Model 7 Regression Equation Examining Relationship between Promoting Power and Years Operating under Unitary Status

	Model 7	
	Promoting Power	Standard Error
1 year after unitary status declared	-0.003	(0.005)
2 years after unitary status declared	-0.003	(0.005)
3 years after unitary status declared	0.004	(0.006)
4 years after unitary status declared	0.017**	(0.006)
5 years after unitary status declared	0.026***	(0.006)
6 years after unitary status declared	0.016*	(0.007)
7 years after unitary status declared	0.016*	(0.007)
8 years after unitary status declared	0.034***	(0.007)
9 years after unitary status declared	0.033***	(0.008)
10 years after unitary status declared	0.041***	(0.008)
11 years after unitary status declared	0.058***	(0.009)
12 years after unitary status declared	0.070***	(0.010)
13 years after unitary status declared	0.055***	(0.010)
14 years after unitary status declared	0.046***	(0.011)
15 years after unitary status declared	0.060***	(0.012)
16 years after unitary status declared	0.055***	(0.013)
17 years after unitary status declared	0.055***	(0.014)
18 years after unitary status declared	0.037***	(0.016)
19 years after unitary status declared	0.039***	(0.019)
20 years after unitary status declared	0.012*	(0.024)
21 years after unitary status declared	0.010*	(0.026)
22 years after unitary status declared	0.001	(0.026)
Poverty Rate	0.092***	(0.057)
Mid-Size City	0.000	(.)
Urban Fringe, Large City	0.030	(0.017)
Urban Fringe, Mid-Size City	-0.023	(0.013)
Large Town	0.035*	(0.018)
Small Town	0.006	(0.035)
Rural	0.184*** (0.00685)	(0.032)
N	15163	
R^2	0.065	

Note. Standardized beta coefficients = * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Standard errors in parentheses

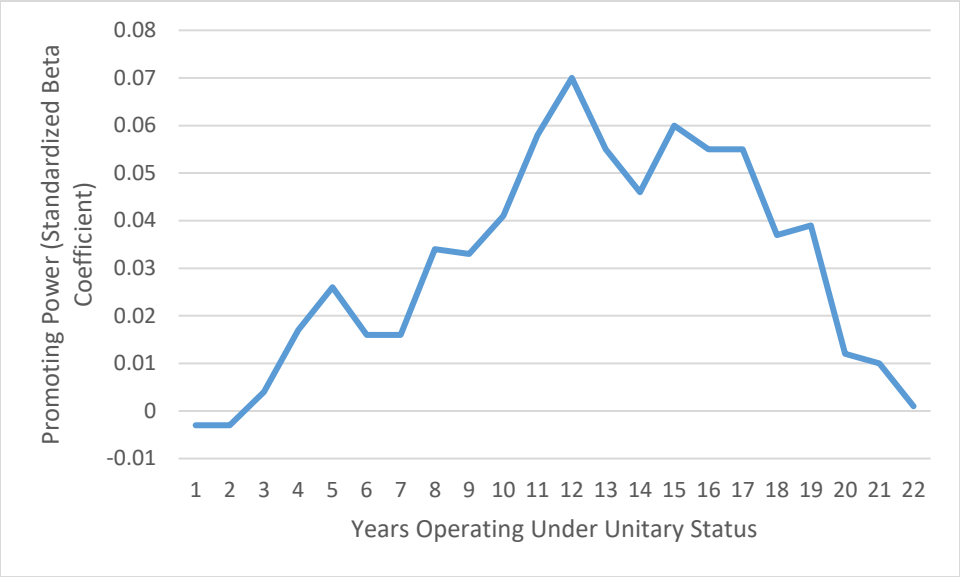

Figure 5.3. Coefficients from Years Operating under Unitary Status, Model 7

The results of Model 7 indicate that, when controlling for other variables, unitary districts see a mostly steady increase in promoting power the first 12 years operating under unitary status, but then a pattern of decline in the second decade of unitary status, with an overall net neutral correlation with promoting power. Overall, Model 7 accounts for an only small amount of the overall variance in promoting power, with an R-squared value of .065.

Dropout Factories

In addition to analyzing the promoting power rates for each of the subsets of schools in the dataset, the analysis also examined the presence of dropout factories over time in each of the subsets of high schools. Table 5.4 shows the number of dropout factories compared to the total number of schools for each of the categories of schools in the dataset.

Table 5.4

Distribution of Dropout Factories by Desegregation Status

	1993			2003			2013		
	Dropout Factories	All Schools	Pct.	Dropout Factories	All Schools	Pct.	Dropout Factories	All Schools	Pct.
Not Under Order	967	8377	12%	2076	10645	20%	1137	10508	11%
Never Released	629	1023	61%	627	1347	47%	438	1645	27%
Unitary	569	893	64%	581	1180	49%	901	1236	73%
Total	2165	10293	21%	3284	13172	25%	2476	13389	18%
Dropout Factories from Districts Impacted by *Dowell*	1198	19%	55%	1208	19%	37%	1339	22%	54%

As Table 5.4 indicates, high schools in districts impacted by the *Dowell* decision are overrepresented in the number of dropout factories, accounting for over half of the dropout factories, while only making up around 20% of the number of high schools overall. While the number of dropout factories, along with the proportion of all high schools made up of dropout factories drops significantly within the "never released" and "unitary" categories, the overrepresentation of these categories remains stable between 1993 and 2013.

One notable statistic that stands out in Table 5.4 is the 2013 percentages of schools designated as dropout factories in each category. While the percentage of high schools qualifying as dropout factories in districts that remained under court order dropped substantially, from 61% to 27%, the percentage of high schools in unitary districts qualifying as dropout factories actually increased—from 64% to 73%. In fact, in 2013, over one-third

(36%) of dropout factories were located in unitary districts, despite the fact that unitary districts operated only 9% of the high schools in the sample that year. A chi-squared test was performed to analyze these relationships between dropout factory designation and desegregation status.

Discussion

It is clear from the findings that different patterns of education attainment existed between the three different categories of districts examined in this chapter. Promoting power was much higher in districts not impacted by the *Dowell* decision, and although these districts experienced more pronounced declines in promoting power throughout the 1990s, a substantial gap exists between districts not under court order and those districts affected by the *Dowell* decision throughout the entire 21-year panel.

These differing patterns of education attainment are also apparent when investigating the prevalence of dropout factories in the three subsets of school districts. The overrepresentation of dropout factories in districts either under court order or operating under unitary status indicates a concentration of high schools struggling with education attainment within these districts. Given the substantial consequences individuals face when they do not obtain a high school diploma, this concentration of likely dropouts in communities grappling with the vestiges of de jure segregation may not be surprising, but it is concerning. While outside of the scope of the data analysis of this chapter, it is likely that many of the districts either still under court order or with unitary designation are historically distressed communities, and a clustering of high school dropouts in these communities will only exacerbate stress on the economics, social welfare, and public health of these school districts.

Regarding the question of whether patterns in education attainment shift after the courts release districts from court-ordered desegregation plans, there are reasons to be concerned for unitary districts. The fixed-effects analysis demonstrated that over time, increases in promoting power stall and then recede. This is particularly concerning because these declines are happening during the same period when schools not impacted by *Dowell* and schools that remain under court order see the greatest increases in their promoting power. This contradictory trend warrants a closer analysis between educational access and the termination of desegregation orders in future research, and should serve as caution to potential plaintiffs mulling a suit pressing for unitary status. Further research should also examine the strategies and policies put in place regarding high schools in unitary districts to gain a better understanding of what contributed to this sustained increase in promoting power, and determine how these strategies or policies could affect educational attainment policies in the future.

This analysis of educational attainment is limited by its use of promoting power as a proxy. Future studies that could calculate adjusted cohort graduation rate for schools historically may provide a more detailed look at high school completion during this period. Additionally, the decreasing likelihood of a high school diploma alone leading to a career that provides economic security should prompt additional research on the impact of court-ordered segregation plans on postsecondary education access and attainment, and ultimately participation in the workforce.

CHAPTER 6

CONCLUSION

The findings presented in the previous three chapters provide significant evidence that unitary districts followed a different trajectory than either districts not impacted by the *Dowell* ruling or districts that remained under court order through 2010. In Chapter 3, analyses of racial composition find that regardless of the desegregation metric included, every analytical model produced statistically significant results that demonstrated that districts under court order at the time of the *Dowell* ruling had substantially different patterns of segregation from 1993 through 2013. These differences persisted in both binary and multi-group measures of segregation, and affected both black and Hispanic students. While the racial composition of all districts changed regardless of their experiences with legal segregation, this does not explain the differences in segregation levels for each subset of district.

In addition to finding both overall changes in racial composition and differing patterns of segregation across the subsets of districts analyzed, this chapter demonstrates that there is a relationship between granting unitary status, and the impact of this status and increasing segregation levels over time. These analyses validate the findings of Reardon et al. (2012), Lutz (2006, 2011), Clotfelter, Vigdor, and Ladd (2006) and others that progress towards integration slows and ultimately reverses once court-ordered desegregation plans are terminated, and that this reversal is more than just chance or the result of the larger demographic shifts in the country's public schools.

Chapter 4 demonstrated that districts impacted by the *Dowell* ruling also have different patterns related to district finance. Districts not under court order were consistently able to spend more per pupil than districts with active court orders and those operating under

unitary status. These higher expenditures in districts not under order persisted despite districts impacted by *Dowell* having had higher local tax burdens over the period studied. The findings in Chapter 4 also contradict the argument made by the plaintiffs in some unitary cases that terminating court orders will free up resources to redirect to instruction. Instead, this analysis found that administrative expenditures initially surge after court orders are terminated, and even after this initial increase recedes, districts never realize a savings in administrative spending. The finance analysis also found that while unitary districts were able to spend more on students for some time after court orders terminated, these efforts could not be sustained long-term.

In Chapter 5, an examination focused on educational attainment showed that court-monitored and unitary districts had much lower rates of educational attainment in 1993, and that a significant gap in education attainment narrowed somewhat but persisted for the duration of the timeframe studied. While the number of schools deemed "dropout factories" shrank over the 21-year period studied, these high schools with very low levels of education attainment were overrepresented in the subsets of districts impacted by the *Dowell* decision. In unitary school districts, increases in promoting power were not sustained, and the net effect over the two decades studied shows no increase in promoting power. Equally concerning, the prevalence in dropout factories increased in unitary districts between 1993 and 2013. This concentration of dropout factories occurred despite statistical analysis showing a sustained improvement in promoting power, a proxy for education attainment, in the two decades following the declaration of unitary status.

There are several limitations to the findings in this dissertation, as well as numerous opportunities for further research. First, while the NCES dataset provided the opportunity to

examine a large number of school districts across the period studied, it was still limited to variables that were consistently collected from all states. This resulted in difficulty measuring educational achievement due to state-by-state variance in standards and assessments. Additionally, given that states did not adopt a common calculation for graduation rates until 2008, the less accurate measure of promoting power was used to measure graduation rates.

This study also sacrificed depth for breadth. By examining patterns across all 480 districts impacted by the *Dowell* decision, this dissertation left many questions about individual districts unanswered. Further research should take a case study approach to examining the path to an individual district's unitary declaration. Additionally, research that focuses on specific districts would allow for further study of educational achievement, intradistrict equity of resource allocation and racial composition, and the impact of district-specific policies such as tracking or discipline policies that may not emerge from a study with a national scope.

Finally, while this analysis identifies several notable patterns where unitary school districts differ from other districts, the analytical models do not answer the question of what causes these differing patterns. I hope that this research serves as a springboard for other scholars to dig deeper into the patterns identified here, and to build analytical models that answers questions of causation.

Implications—A Reconsideration of *Dowell*

These trends also prompt a reconsideration of the arguments that drove both the majority and dissenting opinions in *Oklahoma City v. Dowell*. Specifically, the results of the analysis of 21 years of data from the three subsets of districts examined in this dissertation allow for a more informed perspective on the central debate of the Supreme Court's writings

in the *Dowell* case, which focused on how to define "unitary" status. In the *Dowell* decision, the five-justice majority recommended a limited, mechanical approach to determining unitary status, while the three dissenting justices focused on the concept of the "vestiges" of segregation, and the potential consequences of a weaker, narrower set of standards for determining unitary status (Christopher, 1991).

In the majority opinion of the *Dowell* decision, Chief Justice Rheinquist wrote that when the district court reconsiders granting unitary status, "the District Court should look not only at student assignments, but 'to every facet of school operations—faculty, staff, transportation, extracurricular activities and facilities' [as cited in *Green v. New Kent County* 1968]" (*Board of Education v. Dowell*, 1991, p. 498). This technical definition of unitary status allowed school districts to focus on the efforts they had made towards erasing policies that generated de jure segregation rather than the prevalence of racial isolation in Oklahoma City and other school districts seeking to terminate desegregation plans. The majority opinion also downplayed issues of intent and historical context when considering when to end a court order. Indeed, Chief Justice Rheinquist wrote in the majority opinion:

> A district court need not accept at face value the profession of a school board which has intentionally discriminated that it will cease to do so in the future. But in deciding whether to modify or dissolve a desegregation decree, a school board's compliance with previous court orders is obviously relevant… Not only do the personnel of school boards change over time, but the same passage of time enables the District Court to observe the good faith of the school board in complying with the decree. The test espoused by the Court of Appeals would condemn a school district, once governed by a board which intentionally discriminated, to judicial tutelage for the indefinite future. Neither the principles governing the entry and dissolution of injunctive decrees nor the commands of the Equal Protection Clause of the Fourteenth Amendment require any such Draconian result. (*Board of Education v. Dowell,* 1991, p. 498)

In his dissenting opinion, Justice Marshall stridently opposed this framework for the consideration of unitary status. Justice Marshall noted that the Oklahoma City district operated under a segregated school system that was mandated by the state constitution from the state's founding in 1906 through the *Brown I* decision in 1954—a period of de jure segregation that lasted 48 years. After the initial *Brown* decision, Oklahoma City resisted desegregation for another 18 years until the courts finally imposed a meaningful desegregation plan in 1972. Further, Justice Marshall noted that the district implemented this mandatory desegregation plan for only five years before petitioning the courts to terminate the plan in 1977. Justice Marshall and the other dissenting justices in the *Dowell* case argue that, against this historical backdrop where segregated schools were the de jure status for over 60 years, five years of technical compliance to a mandated desegregation plan was insufficient evidence that the underlying vestiges and stigma associated with segregated schools had been removed. As Justice Marshall wrote:

> The majority today suggests that 13 years of desegregation was enough. The Court remands the case for further evaluation of whether the purposes of the injunctive decree were achieved sufficient to justify the decree's dissolution. However, the inquiry it commends to the District Court fails to recognize explicitly the threatened reemergence of one-race schools as a relevant "vestige" of de jure segregation. (*Oklahoma City v. Dowell*, 1991, p. 498)

In addition to opposing the idea that technical compliance with a desegregation order over a short period provided sufficient evidence for terminating a court order, Justice Marshall also resisted the idea that unitary status should be based solely on technical compliance with desegregation orders. In his dissent to the *Oklahoma City v. Dowell* decision, Justice Thurgood Marshall wrote:

> By focusing heavily on present and future compliance with the Equal Protection Clause, the majority's standard ignores how the stigmatic harm identified in *Brown*

> *I* can persist even after the State ceases actively to enforce segregation. It was not enough in *Green,* for example, for the school district to withdraw its own enforcement of segregation, leaving it up to individual children and their families to "choose" which school to attend. For it was clear under the circumstances that these choices would be shaped by and perpetuate the state-created message of racial inferiority associated with the school district's historical involvement in segregation. In sum, our school desegregation jurisprudence establishes that the *effects* of past discrimination remain chargeable to the school district regardless of its lack of continued enforcement of segregation, and the remedial decree is required until those effects have been finally eliminated. (*Oklahoma City v. Dowell,* 1991, p. 498)

The results of the research findings in this dissertation provide some validation to the concerns that Justice Marshall expressed in this passage. While unitary districts may have removed all evidence of de jure segregation policies, these analyses provide evidence that segregation and unequal outcomes not only persisted but also accelerated after unitary declarations. Because the patterns are unique to unitary districts, it raises enough questions that further research should explore questions of whether unitary declarations caused rises in segregation and decreases in spending and educational attainment in unitary districts between 1993 and 2013.

Implications for Unitary Districts

Additional concerns arise when these research results are considered in the perspective of a political economy framework. Throughout the 1990s and 2000s, numerous political, policy, and judicial forces pushed for more equity in public education. Despite frequent, often well-founded criticisms of the accountability movement generally and the No Child Left Behind Act specifically, these initiatives received support from civil right groups because they held schools accountable for helping all students learn (DeBray-Pelot & McGuinn, 2009). Since the *Dowell* ruling, numerous plaintiffs have won court battles focused on equity in school funding, winning about two-thirds of these cases (Hunter, 2017). Throughout the

1990s, and to a lesser extent in the mid-2000s, a strong economy blunted some of the worst effects of inequity. Finally, the federal government actively pursued equity and equality through the Office of Civil Rights at both the Departments of Justice and Education for most of the years between 1993 and 2013. Given all of these forces pushing for equity, it is reasonable to hypothesize that advocates for unitary status were reacting against a pro-equality climate during the 1990s and 2000s.

Considering that unitary districts exhibited a shift toward higher levels of segregation despite an overall climate that promoted equity, it is troubling to consider what may happen to unitary districts in the future given shifts in the political, judicial, and economic climate over time. The Supreme Court's decisions in *Meredith v. Jefferson* and *Parents Involved in Community Schools (PICS) v. Seattle Public Schools* significantly curtail the ability of unitary districts to address racial inequality once the courts terminate mandatory desegregation plans. For example, the *Dowell* majority opinion, in arguing that there were still opportunities to promote racial equity in the district noted, "Any student could transfer from a school where he or she was in the majority to a school where he or she would be in the minority. Faculty and staff integration was retained, and an "equity officer" was appointed." These policies would likely be impermissible today given the *Meredith* and *PICS* decisions.

In addition to this weakening of judicial routes to promote racial equality, the evolution of federal education policy from NCLB to the Every Student Succeeds Act (ESSA) has resulted in a significant weakening of the ability of the U.S. Department of Education to affect educational outcomes for disadvantaged students. Further, the philosophy and tone of the Trump administration towards the federal role in education and advocacy for civil rights raises serious questions about whether the federal government will exert significant effort to

leverage what authority it does have on behalf of increasing racial equity in education. This shift in federal policy and priorities allows individual states and communities to implicitly—and in some cases explicitly—pursue agendas that result in racial segregation in schools.

Indeed, several instances of apparently blatant de jure segregation have surfaced in recent years. In Gardendale, Alabama, white residents are pressing to secede from Jefferson County schools (Rosen, 2016), which includes the city of Birmingham, which has been under court order since 1971. Residents of mostly white St. George, Louisiana, have been seeking to break off from the majority-minority East Baton Rouge Parish School System since 2013 (Barlow, 2015). The secession movements follow many of the patterns established when a number of schools in the Kansas City, Missouri School District seceded and were subsequently annexed by the Independence, Missouri school district in 2007 (Herl, 2011). Both East Baton Rouge and Kansas City, Missouri, had their court-ordered desegregation plans terminated in 2003, giving district secessionists an easier to break off from the school districts. In the case of Gardendale, a district judge ruled in April 2017 that the Birmingham suburb could secede, despite fears of a racial motive (Brown, 2017).

Given the overall shift away from a focus on equity, it is a reasonable concern that the trends documented in this dissertation may increase in severity or accelerate the rate of change. Researchers and policymakers should continue to closely monitor segregation metrics as well as measures of educational equity in unitary districts and call attention to further shifts in racial composition, spending patterns, and educational attainment as well as continue to find additional data sources that allow for further study of the impact of unitary status on students who attend school in these districts.

Implications for Districts that Remain under Court Order

These findings also have important implications for districts that continue to operate under the guidelines of court-ordered desegregation plans. These analyses suggest that there are notable consequences associated with unitary status, and that some of the supposed benefits, such as decreased administrative spending may not cover the costs of a shift to unitary status. Additionally, shifts in the legal landscape since the *Dowell* ruling constrain districts' ability to factor race into district policy once unitary status is conveyed, and districts should proceed carefully when weighing the benefits of seeking unitary status. Given the evidence presented here, districts that remain under court supervision would do well to carefully consider Justice Marshall's concerns in his dissenting opinion in the *Dowell* case and consider whether all vestiges of segregation have truly been eliminated from their school districts before seeking a declaration of unitary status.

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